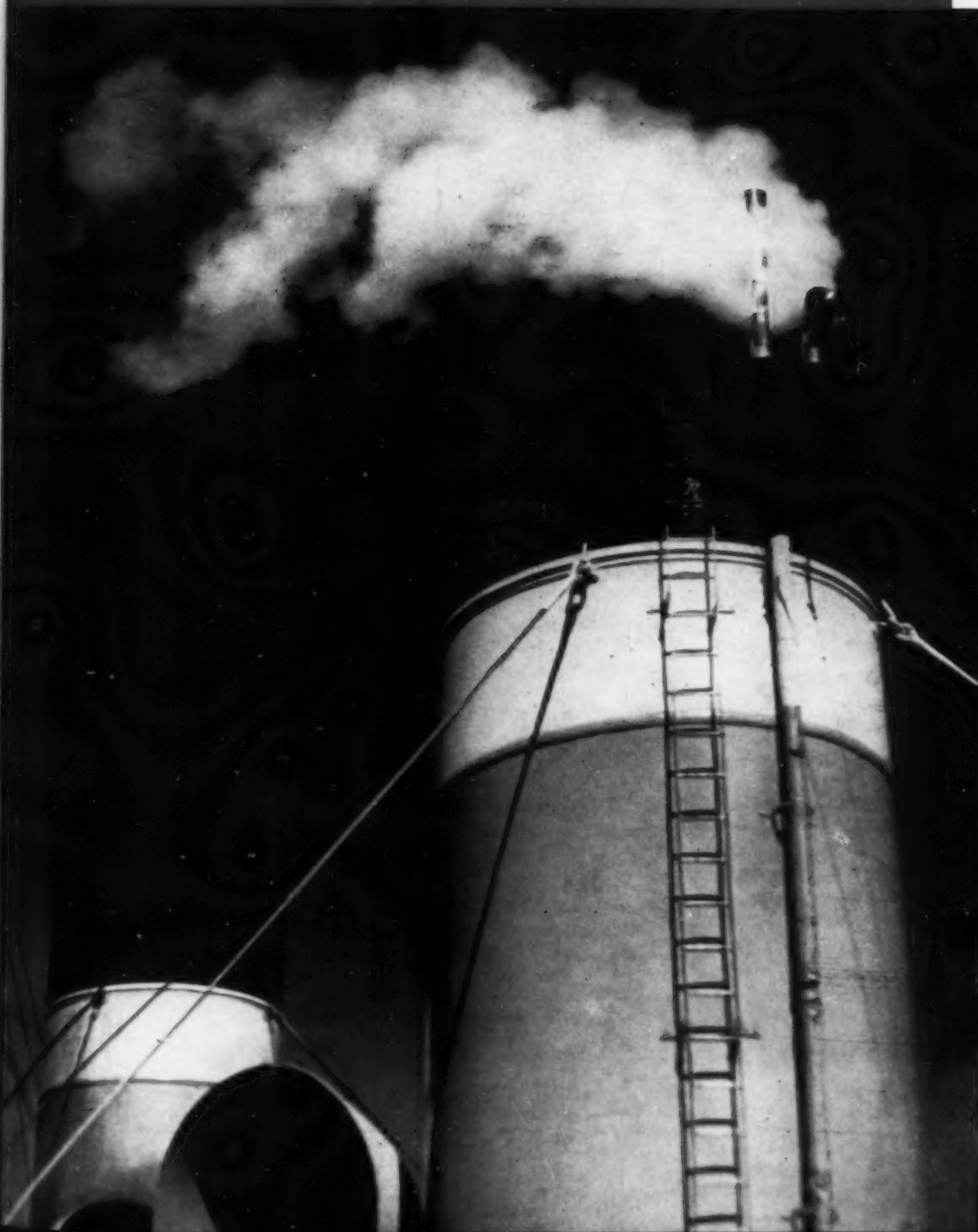


CANADIAN GEOGRAPHICAL JOURNAL

SEPTEMBER
1939

VOL. XIX
NO. 3



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CANADIAN GEOGRAPHICAL JOURNAL

Editor

Gordon M Dallyn

172 WELLINGTON STREET, OTTAWA

This magazine is dedicated to the interpretation, in authentic and popular form, with extensive illustration, of geography in its widest sense, first of Canada, then of the rest of the British Commonwealth, and other parts of the world in which Canada has special interest.

Contents

SEPTEMBER, 1939

VOLUME XIX No. 3

COVER SUBJECT:—Peaceful commerce on the Great Lakes, where 518 vessels of American registry, having a gross tonnage of 3,494,640, and 273 vessels of Canadian registry, having a gross tonnage of 934,950, pass up and down this inland water-way. (Photo by Editorial Associates—Courtesy Canada Steamship Lines)

Ships that pass in the night and speak each other in passing;
Only a signal shown and a distant voice in the darkness;
So on the ocean of life we pass and speak one another,
Only a look and a voice; then darkness again and a silence.

Longfellow.

	PAGE
THE GREAT LAKES—AN INTERNATIONAL HERITAGE, by LAWRENCE J. BURPEE	157
THE CHARLOTTETOWN CONFERENCE REVIVED, by D. C. HARVEY	185
BIRD LIFE ON THE CATTLE RANGE, by J. A. MUNRO	193
CANADA'S HOLY ALTARS, by CHARLES CLAY	201
A TRAVELLING MARKET ON THE IRRAWADDY, by ARTHUR SLATER	207
EDITOR'S NOTE-BOOK	V
AMONGST THE NEW BOOKS	V

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The British standard of spelling is adopted substantially as used by the Dominion Government and taught in most Canadian schools, the precise authority being the Oxford Dictionary as edited in 1936.

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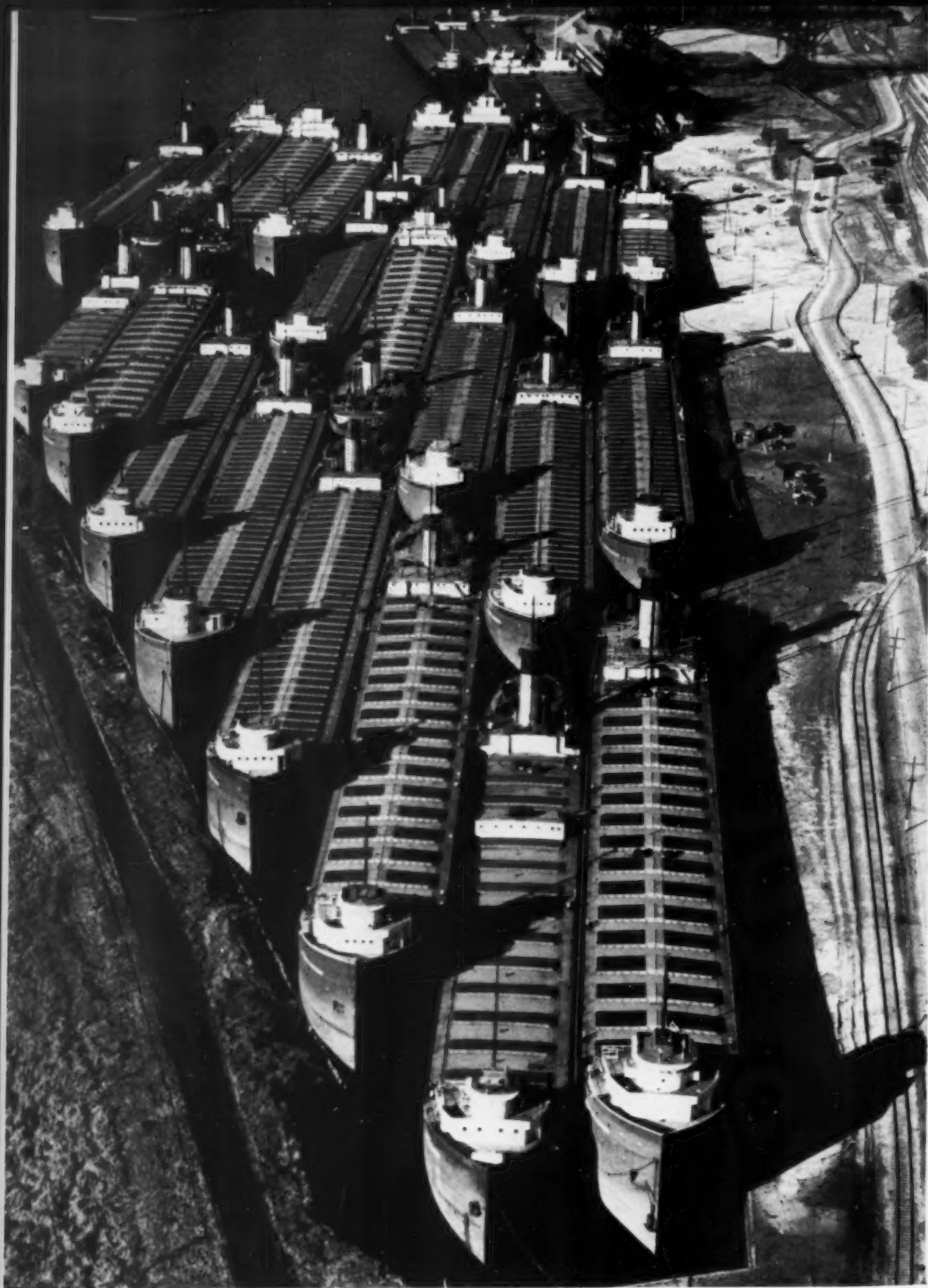
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Leviathans of the Lakes wintering at Milwaukee, on Lake Michigan. These twenty-seven bulk freighters, with navigating facilities in the bow and engines in the stern, are typical of the craft engaged during the summer months in the transportation of grain, coal, iron ore and other cargo of a similar character on the Great Lakes.

Photo by The Milwaukee Journal.

THE GREAT LAKES

AN INTERNATIONAL HERITAGE

by LAWRENCE J. BURPEE

WATER-WAYS and water craft are, beyond reasonable doubt, the most ancient means, other than his own feet, that have been used or contrived by man to get from one place to another. Rivers and lakes and the marginal seas were water thoroughfares when railways had not yet been even dreamed of, or wheeled vehicles invented. Before the first white man set foot on the shores of North America the Indian had perfected one of the most graceful and convenient of vessels; and by means of his canoe the exploration of the Great Lakes, and, indeed, of the immense region we know as Canada, was carried out.

All the continents except Australia have great water-ways that, with or without artificial improvement, provide highways from their heart down to the ocean. Europe has the Rhine and the Danube, Africa the Nile, Asia the Yangtse, South America the Amazon, and North America the Mississippi and the St. Lawrence, with its gigantic expansions, the Great Lakes. Of all these none is more perfectly adapted than the last to serve the purposes of communication and commerce. The Great Lakes, with their coast-line of several thousand miles, their many harbours and tributary streams, and the millions of people and vast industrial and agricultural wealth found on or near their shores, offer a geographical and economic problem that is well worth exploring.

I have called the Great Lakes an "International Heritage", and they are indeed a priceless heritage to Canada and the United States, each of which is concerned in developing their economic and aesthetic possibilities so as to best serve the interests of the people on both sides of the international boundary. In order that this might be done equitably and without friction these two neighbouring countries have set up various agencies, the most significant of which is the International Joint Commission, which has jurisdiction over a variety of problems arising not only in the Great Lakes but at many points along the international boundary from the Atlantic to the Pacific.*

Nature gave the Great Lakes a magnificent natural outlet to the sea, and that outlet was adequate to the needs of the people in very early colonial days, but the time was bound to come when the growth of population, of commerce, and of the means of water transportation would demand artificial improvements. When Jacques Cartier came up the St. Lawrence in 1535, he left his larger ships behind at Stadacona (Quebec) and sailed up the river in the little *Emerillon*. When he reached Lake St. Peter he found only a fathom and a half in the channel, where great ocean steamers sail to-day, and had to continue his journey to Hochelaga (Montreal) in long-boats. From Montreal to Lake Ontario the river was constantly broken by rapids, around which Cartier's successors had to portage their canoes. Other formidable portages were met with between Lake Ontario and Lake Erie, or on the Ottawa River route to Lake Nipissing and Georgian Bay, and between Lake Huron and Lake Superior.

The day came when the canoe no longer reigned alone. The bateau, and later the Durham boat, appeared on Canadian waters, and it was found impracticable in many places to portage these comparatively heavy and cumbersome craft. Small canals were therefore cut around the rapids of the St. Lawrence. Afterwards sailing ships were built, and, much later, steamboats, and the canals had to be enlarged, and others added, until a day came when ocean-going ships of 14-foot draught could be navigated from the Atlantic up the St. Lawrence into Lake Ontario, by the Welland Canal into Lake Erie, thence up the Detroit River, through Lake St. Clair, and up the St. Clair River, into Lake Huron, and thence either into Lake Michigan or by the St. Mary's River and the St. Mary's Canal into Lake Superior. Commerce grew on the Great Lakes, and more and ever deeper canals were built at the outlet of Lake Superior, channels were dredged in the St. Mary's River and from Lake Huron to Lake Erie, the Welland Ship Canal was completed between Lake Erie and Lake

*An account of the history and activities of the International Joint Commission will be found in an article by the present writer, "From Sea to Sea", in the *Canadian Geographical Journal*, January, 1938.

Ontario, and the St. Lawrence Ship Channel was gradually deepened to 20 feet, 25 feet, 30 feet and, finally, to 35 feet, the last depth being still incomplete.*

Then, rather late in the day one might have thought, men began to discuss seriously the practicability and desirability of completing the chain of deep water navigation from the head of the lakes to the sea. Something over \$400,000,000 has been spent by Canada and the United States in canals and river channels in the Great Lakes area and the lower St. Lawrence, resulting in a deep water-way from Duluth or Fort William or Chicago to the foot of Lake Ontario, and from Montreal to the sea. Deep draught vessels can sail down to Prescott, or up to Montreal, but there in either case they run up against an impassable barrier. Canada spent \$132,000,000 on a canal to bring large ships down into Lake Ontario, but no farther. The United States put \$100,000,000 into a canal that gives connection with the sea by way of the Hudson, but only for barges. Why the problem of the St. Lawrence deep water-way has not yet been solved involves questions of provincial, national and international politics and policy into which it would be impracticable to go at the present time. All that one need say is that the deep water-way from the head of the lakes to the sea may come to pass in the next few years, or it may not be built for another generation, but some day, beyond reasonable question, it will be done.*

Meanwhile, what of the Great Lakes and their history; how they were discovered, how ships came to ply upon their waters, and how these ships carried a commerce that grew and grew until it was

greater than that of the Suez and Panama canals combined. Nowhere else will you find a more amazing transformation, from the days of Jacques Cartier to the present time. As Mr. George A. Cuthbertson says in his entertaining and informative book *Freshwater*, from which a number of the facts in this article are drawn, "In four hundred years the Great Lakes basin has changed from an unknown wilderness to the most crowded water-way in the world."

It was in 1535, as I have said before, that Cartier made his way up the St. Lawrence to the island of Montreal. Eighty years later, Champlain, having already explored the Ottawa River to and beyond the site of the future capital of the Dominion, portaged over from its upper waters to Lake Nipissing and descended the French River to Georgian Bay. Taking Etienne Brûlé with him he travelled inland to Lake Simcoe with a party of Huron Indians. From there he followed the Trent water-ways to the Bay of Quinté on Lake Ontario, while Brûlé reached the western end of the same lake by way of the Humber at Toronto. There is some evidence that Brûlé, a few years later, made his way from Lake Huron up the St. Mary's River to Lake Superior.* What is more certain is that the missionaries Jogues and Raymbault preached the faith in 1641, at the outlet of Lake Superior, where the twin cities of Sault Ste. Marie stand to-day, and that the south shore of the lake was explored to its western end by Radisson, Ménard and Duluth between 1660 and 1680. Meanwhile, in 1640, Lake Erie had been discovered by two other Jesuit missionaries, Brébeuf and Chaumonot, and explored thirty years later by the Sulpicians, Dollier de Casson and Galinée.

*See G. W. Yates, "The Welland Canal" in *Canadian Geographical Journal*, January, 1931; and Douglas MacKay, "Glimpses of a Familiar River", in *Canadian Geographical Journal*, August, 1930.

*See B. K. Sandwell, "St. Lawrence Waterway", in *Canadian Geographical Journal*, November, 1930.

*See C. P. Wilson, "Etienne Brûlé and the Great Lakes", in *Canadian Geographical Journal*, April, 1932.



All this exploration was done with the aid of canoes, and only with canoes. In 1678 La Salle launched, in what is now the harbour of Kingston, on Lake Ontario, the first sailing ships on the Great Lakes. There were four of them, and they were of ten tons, according to Father Hennepin, who also says they were brigantines. Mr. Cuthbertson, who knows about ships ancient and modern, is definitely of the opinion that Hennepin must have been misinformed, as brigantines carried too many square sails to have been of use, or even safe, in any vessel under fifty tons. He thinks that they were more probably of a type that later developed into the schooner. At any rate, they were built to provide transport between Fort Frontenac and the mouth of the Niagara, where La Salle had decided to put up another post. One of them was named the *Frontenac* and another the *Cataraqui*. The names of the other two are not known, though one may have been *Le Général*.

In 1679 La Salle, having brought men with tools and supplies to a point on the Niagara River not far from Buffalo, built there the *Griffon*, the first sailing vessel on the Upper Lakes. In her he sailed through Lake Erie and Lake Huron and down to the foot of Lake Michigan. She was lost on the return voyage. Several other small sailing ships were built on Lake Ontario in the next sixty or seventy years, but on the upper lakes one finds no record of any craft larger than a canoe from the time of the ill-fated *Griffon* to the end of the French régime. At that time, that is in 1763, the French had small settlements or trading posts at Fort Frontenac, Fort Rouillé (Toronto) and Niagara, on Lake Ontario; Detroit on the Detroit River; Michilimackinac, later known as Mackinac, on the strait between Lake Huron and Lake Michigan; Sault Ste. Marie and Kaministiquia on Lake Superior. The

English had a frontier post at Oswego, on the south side of Lake Ontario.

Here at Oswego, in 1755, were built the first sailing ships launched from British shipyards on the Great Lakes, the *Oswego* and the *Ontario*. These were sloops, each of about one hundred tons. At the same place, and in the same year, were launched the schooners *George* and *Vigilant*. All four were war vessels, the sloops armed with eight and ten-pounders, the schooners with five-pounders. Of this little fleet on Lake Ontario we hear something in Fenimore Cooper's novel *The Pathfinder*, as well as of life at Oswego about the middle of the eighteenth century. One of the characters in the book is an old salt water sailor, who is very much puzzled by the absence of tides on Lake Ontario. Curiously enough statements and arguments have been put forward from time to time to prove the presence of tides on the Great Lakes, and particularly on Lake Superior and Lake Huron. The scientific explanation seems to be that what appear to be tides are merely the result of prevailing winds from one direction.

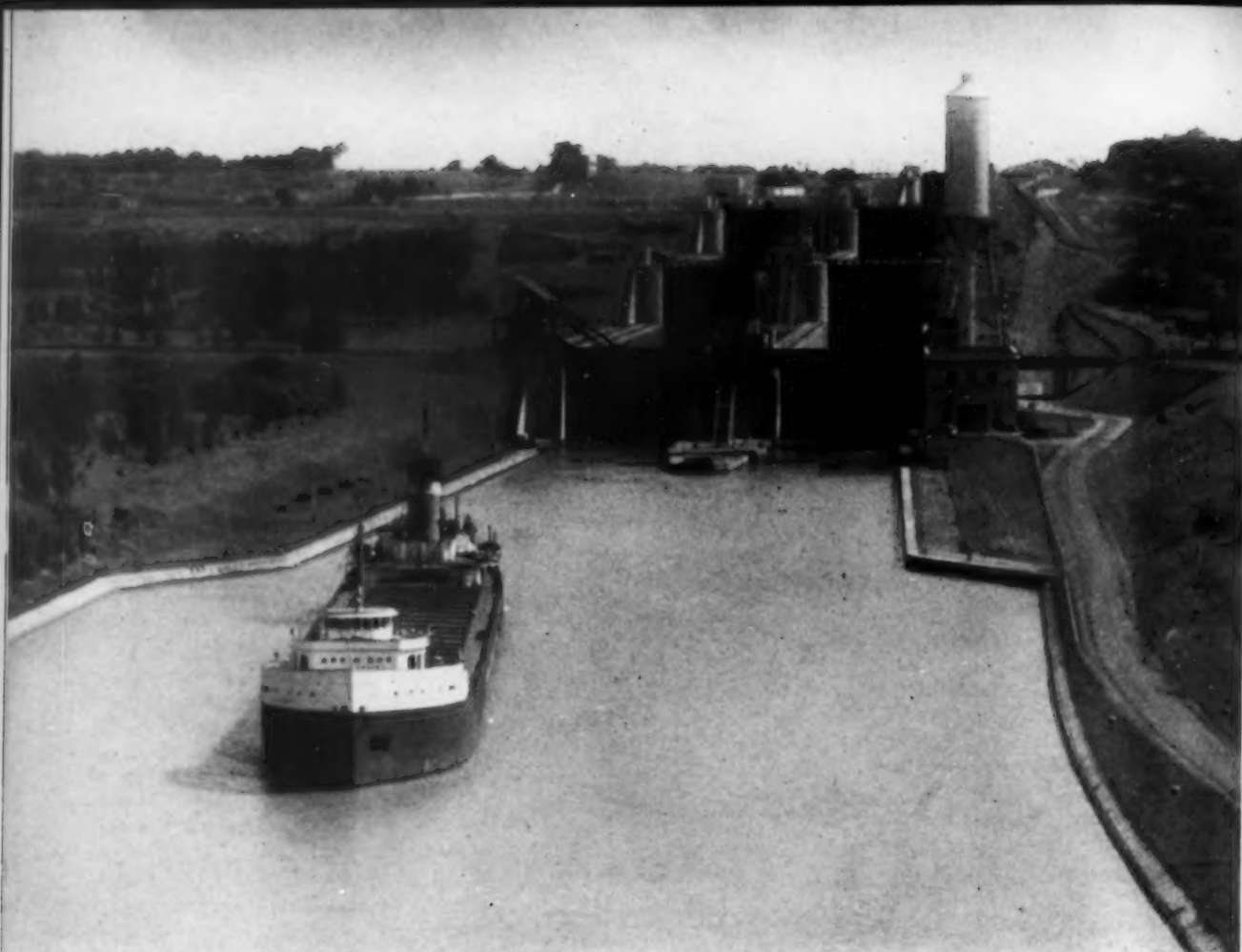
Eight years after the building of the four vessels at Oswego, the schooners *Huron* and *Michigan* were built at Navy Island, on the Niagara River above the falls. These were the first sailing craft launched on the Upper Lakes after the *Griffon*.

Returning to Lake Ontario, Oswego was the base of English operations against the French, and William Shirley, Governor of Massachusetts, who was in charge of the campaign on Lake Ontario, laid his plans

Refinery at Sarnia, Ont., of the Imperial Oil, Limited, extending for nearly two miles along the Canadian side of the St. Clair River. From this plant, which is the largest in the Dominion, tankers carry gasoline and oil to many ports on the Great Lakes. (Additions have been made since this photograph was taken to meet present day requirements).

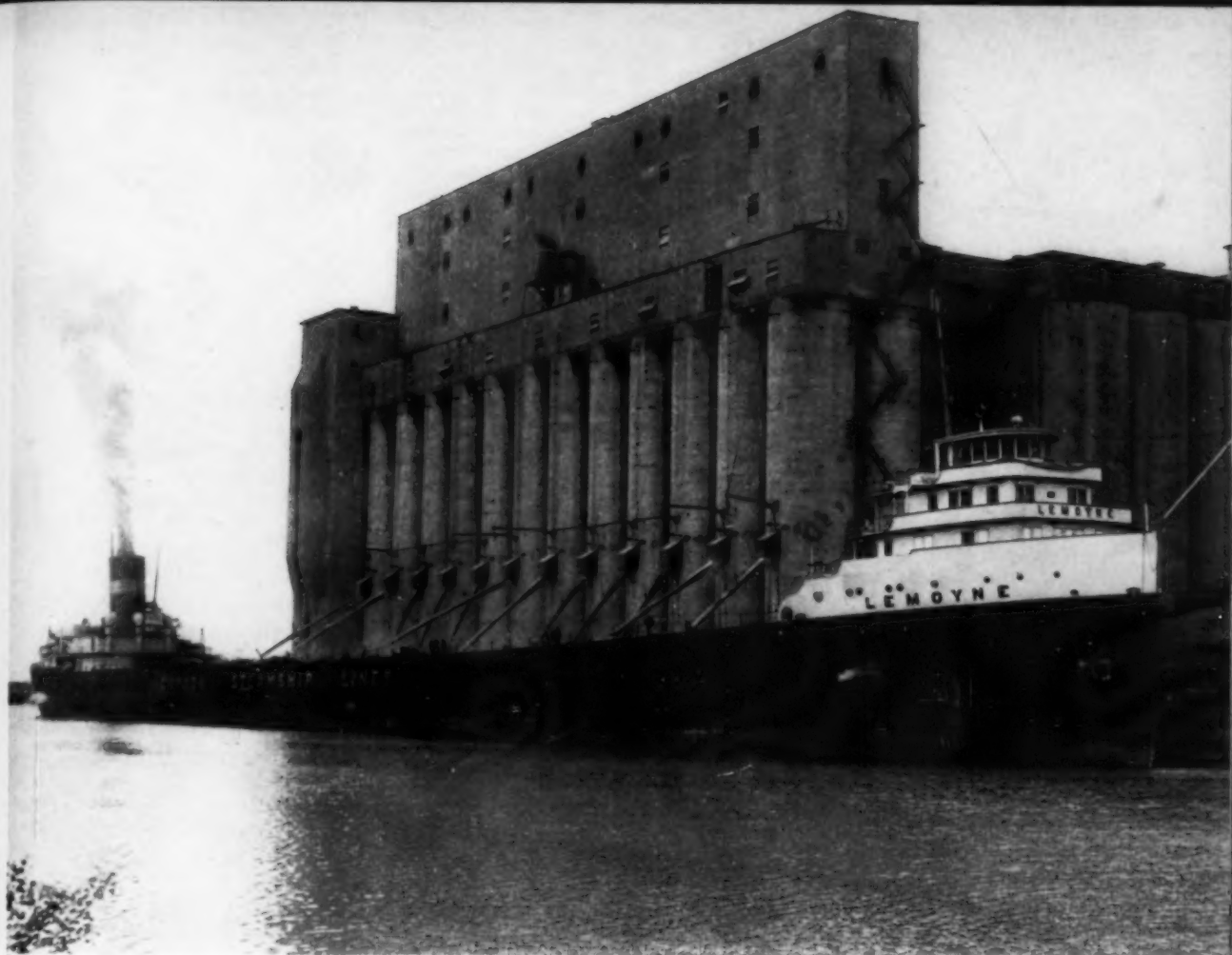
Photo by Airmaps Limited.





Locks in the Welland Canal, which extends a distance of 27.6 miles from Fort Colborne, on Lake Erie, to Port Weller, on Lake Ontario. There are eight locks in this system, these having a length of 859 feet, a width of 80 feet and a depth of 30 feet. Large lake steamers, capable of carrying half a million bushels of grain, make use of the chain of locks that enable them to circumvent the Niagara Falls.





Longest bulk freighter on the Great Lakes—the S.S. Lemoyne of 633 feet—loads over 500,000 bushels of wheat from one of the huge elevators at the twin ports of Fort William-Port Arthur, Ont. Craft of this size can proceed a distance of 1,104 miles from Fort William to Prescott, eight miles above the western end of the St. Lawrence Canal system, and 119 miles from Montreal. Below:—Other bulk carriers awaiting grain cargoes in Port Arthur.





Blue Water Bridge, which spans the St. Clair River between Sarnia, Ont., and Port Huron, Mich. It was opened on October 10, 1938, as another link between Canada and the United States. Point Edward, Ont., and Lake Huron are seen beyond the bridge.

for the subjugation of Fort Frontenac, Fort Rouillé and Fort Niagara. He was working in co-operation with General Braddock, who was to attack Fort Duquesne, on the Ohio, and, if successful there, was to join Shirley at Niagara. Unfortunately Braddock was defeated and mortally wounded, and, instead of attacking Frontenac or Niagara, Shirley had to defend Oswego from the reinforced and triumphant French. Braddock's papers had been captured, and the plans of the English were laid bare. The following year, 1756, Oswego was captured by the French, but in the meantime Shirley had been relieved of his command. Two years later Colonel Bradstreet retaliated by capturing Fort Frontenac together with nine French vessels, and the following year Fort Niagara and Fort Rouillé also fell to the British. Detroit and the other posts on the Upper Lakes were taken over after the capitulation of Canada.

All the old French posts on the Great Lakes or their connecting rivers have survived to the present time, under their own or a changed name, and it is interesting to contrast the varying fortunes of these and later inland posts. Detroit, for instance, after nearly a century's experience as a trading post, began to reap the benefit of its exceptionally favourable geographical position, and grew at an ever-increasing pace until it is now one of the greatest of the industrial cities of the continent, with a population approaching two million. Oswego, on the other hand, has to-day something less than 23,000 people. Toronto, once Fort Rouillé, is at the present time the second largest city in the Dominion, with many important industries, and a population of 700,000; while Kingston, formerly Fort Frontenac, has about 24,000; not very much more than it had half a century ago. Chicago, which was incorporated in 1833 with a population of 550, now has three and a half millions, with manufactured products of a total annual value of about \$4,000,000,000. Mackinac (once Michilimackinac), at the other end of Lake Michigan, has, after 270 years, something less than a thousand people. The twin cities of Sault Ste. Marie contain

together not much more than a thirtieth of the population of Cleveland, although they existed before Cleveland was born, and probably they bear about the same industrial relationship to the Lake Erie port. Fort Niagara, with a history that goes back 261 years, is now a silent relic of the past, and Niagara-on-the-Lake, on the Canadian side of the river, although the first Legislature of Upper Canada met there in 1792, is to-day a very small town, while the City of Hamilton, at the western end of Lake Ontario, founded in 1813, counts a population of 170,000.

The earliest white traffic on the Great Lakes had to do with the fur trade. It consisted of trading goods and provisions carried westbound, and packs of furs eastbound. For generations the only vessel used in the fur trade was the canoe; the type employed on the Great Lakes and their connecting rivers, as well as on the Ottawa River route, being the large canoe known as the *canot de maître*. In the French period both traders and canoe men were French. After the cession of Canada to England, when English traders made their way out into the west, they found that the French-Canadian *voyageur* was the best of all canoemen, cheerful, hard-working, resourceful, in fact perfectly adapted to the exacting requirements of that form of navigation. As a result, while the traders themselves both in the North West Company and the Hudson's Bay Company, to a very large extent were Scots, the canoemen continued to be French-Canadian.

Up to 1821, when the North West Company was amalgamated with the Hudson's Bay Company, trading goods were shipped west from Montreal to Detroit, to Michilimackinac or to Grand Portage, and later to Fort William, and there trans-shipped to smaller canoes for the long journey to one or other of the inland posts. Some of these were two thousand miles or more distant. In course of time, as the traffic in peltries became more important, the North West Company employed sailing vessels to carry supplies or furs on the Great Lakes. Four of these were the *Recovery*, *Nancy*, *Mink* and *Perseverance*. The first was a brig, the others, schooners. The *Recovery* and *Perseverance*, built respectively in 1800 and 1803, were used on Lake Superior between Sault Ste. Marie and Fort William. The *Nancy* was built at Detroit in 1789, and was taken over by the Government and used in the War of 1812 to carry supplies to Michilimackinac. The *Mink* and *Per-*

severance were destroyed by the Americans, and the *Nancy* was set afire and sunk in the Nottawasaga River to prevent her from falling into the hands of the enemy. Her hull has been raised and is now preserved as an historical relic.

Fort William, about the time of the War of 1812, was the most important trading post of the North West Company. Here the *bourgeois* or partners of the Company came together, up from Montreal and down from interior trading posts, near and far, some in the extreme north and others west of the Rocky Mountains, for the annual meeting. Of this ceremonial conference, Washington Irving gives a picturesque though perhaps rather highly coloured picture in *Astoria*. The partners from Montreal, in particular, travelled in great state, "like Highland chiefs navigating their subject lakes. They were wrapped in rich furs, their canoes freighted with every convenience and luxury, and manned by Canadian *voyageurs* as obedient as Highland clansmen. They carried up with them cooks and bakers, together with delicacies of every kind, and abundance of choice wines for the banquet which attended this great convocation."

Washington Irving goes on to describe the place and its people: "Fort William, the scene of this important annual meeting, was a considerable village on the banks of Lake Superior. Here, in an immense wooden building, was the great council hall, as also the banqueting chamber, decorated with Indian arms and accoutrements, and the trophies of the fur trade. The house swarmed at this time with traders and voyagers, some from Montreal, bound to the interior posts; some from the interior posts, bound to Montreal. The councils were held in great state, for every member felt as if sitting in parliament, and every retainer and dependant looked up to the assemblage with awe, as to the house of lords. There was a vast deal of solemn deliberation, and hard Scottish reasoning, with an occasional swell of pompous declamation.

"These grave and weighty councils were alternated by huge feasts and revels, like some of the old feasts described in Highland castles. The tables in the great banqueting-room groaned under the weight of game of all kinds; of venison from the woods, and fish from the lakes, with hunters' delicacies, such as buffaloes' tongues, and beavers' tails; and various luxuries from Montreal, all served by

experienced cooks brought for the purpose. There was no stint of generous wine, for it was a hard-drinking period, a time of loyal toasts, and bacchanalian songs, and brimming bumpers.

"While the chiefs thus revelled in hall, and made the rafters resound with bursts of loyalty and old Scottish songs, chanted in voices cracked and sharpened by the northern blast, their merriment was echoed and prolonged by a mongrel legion of retainers, Canadian *voyageurs*, half breeds, Indian hunters, and vagabond hangers-on, who feasted sumptuously without on the crumbs that fell from their table, and made the welkin ring with old French ditties, mingled with Indian yelps and yellings."

Sir Henry Lefroy, who visited Fort William in 1884, describes it as "dwarfed into entire insignificance by the rising city of Prince Arthur's Landing (Port Arthur)". Since then Fort William has regained its prominence, but now as a shipping point for grain down the Great Lakes.*

*See W. B. Herbert, "Castles of the New World", in *Canadian Geographical Journal*, May, 1933.



Opposite Pelee Island, Ont., this lighthouse at Marblehead, Ohio, was erected in 1821, and is one of the many aids to navigation provided by the United States and Canada to assist shipping on the Great Lakes.



Passenger and freight terminals in the Port of Toronto. Frequent steamship services are maintained between this and other ports on the Great Lakes and Montreal, at the foot of the St. Lawrence Canal System.

Gabriel Franchère, of the North West Company, travelled east by canoe from Fort William in July, 1814. When he arrived at Sault Ste. Marie he found the buildings of the Company and the rest of the little settlement on the Canadian side in ruins, having been burnt by Major Holmes and a detachment of American troops. What was left of the *Perseverance* was still smouldering at the foot of the rapids. He could hear the sound of artillery at Michilimackinac, sixty miles away. While he was still at Sault Ste. Marie, several of the partners of the North West Company arrived from Fort William, and announced that the annual flotilla of furs, in forty-seven canoes, was on its way down Lake Superior. This rich cargo, valued at a million dollars, was being eagerly watched for by the enemy, but by careful management the Nor'Westers succeeded in getting the flotilla through Lake Huron and safely into the French River.

After the conclusion of the War of 1812 commercial traffic, in addition to that of the fur traders, began to develop on the Great Lakes, and as the years went by both population and commerce increased at an amazing rate. "There have been" says Mr. Cuthbertson "great migrations of peoples in the old world, in past ages, but none have been so rapid or on so large a scale as the influx of immigrants into the lake districts. The exodus of the Israelites from Egypt into the Land of Canaan required over forty years to carry out, and the persons involved were countable only in thousands, while the exodus of people from Europe and the eastern portions of the American continent into the region of the five lakes is countable in millions."

Lake navigation for many years played a major part in this great movement of peoples and produce. Throughout the greater part of the first half of the nineteenth century water transport held most of the field. Roads were few and of poor quality, and railways were only beginning

to be built toward the end of that period. After 1850 water transport developed fields of its own, heavy bulk cargo like coal and iron ore in which the railways could not compete with lake shipping. But that was after the introduction of steam navigation on the Great Lakes, which began in 1816 with the launching of the *Frontenac* near Kingston. Even before the introduction of steam, settlers and their effects used the lakes as a cheap means of transportation to newly-opened districts on both sides of the boundary and sailing craft also made up cargoes of grain, flour and other foodstuffs as well as of the output of lakeside sawmills.

The year the *Frontenac* was built also saw the birth of an unneighbourly, though not unnatural, practice. The company that built the first steamboat on the lakes petitioned the House of Assembly of Upper Canada "that all foreign vessels navigating by steam or otherwise may be prohibited by law from carrying in any manner from one Port within the waters of Lake Ontario to another Port within the same waters in this Province." American vessels are still prohibited from doing business between one Canadian port and another Canadian port on the Great Lakes, and a similar rule prohibits traffic of Canadian vessels between Americans ports. There are some things we do not seem to have learned in a century and a quarter.

While the *Frontenac* was still building, work was begun on the first American steam vessel on Lake Ontario, the *Ontario*, launched at Sackett's Harbour in 1817. The following year the *Walk-in-the-Water* was launched at Black Rock, near Buffalo. She travelled between Buffalo and Detroit, and occasionally as far as Michilimackinac, but broke up in a storm on Lake Erie in 1821. The *Walk-in-the-Water* was the first steamboat on the Upper Lakes. Before 1845 steam navigation had been introduced on all the lakes except Superior. In that year and up to 1853 seven steamers and seven schooners were built below and moved over the "Soo" portage into Lake Superior. A canal for boats and canoes had been constructed by the North West Company in 1798. The first ship canal on the American side was opened in 1855, and that year the brigantine *Columbia* went through the canal with the first load of iron ore from Minnesota, the beginning of a huge traffic. Other American locks



S.S. Noronic, one of the popular passenger and general cargo steamers operating on the Great Lakes, in the locks of the Sault Ste. Marie Canal. This water-way enables vessels to circumvent St. Mary's Rapids, between Lake Superior and Lake Huron.

Courtesy Canada Steamship Lines.

Familiar scene at Midland, in Georgian Bay, Ont., which is a popular port of call for passenger ships from Buffalo, Cleveland, Detroit and Chicago. A quantity of freight, including grain, is also handled through Midland.



and canals were built from time to time, and in 1895 the Canadian lock was opened for traffic *

In 1849 an initial page in the opening of the Great Lakes to the sea was turned when the *Eureka* cleared from Cleveland, bound for California, with passengers and supplies for the gold fields. She went by the Welland and St. Lawrence canals to the Atlantic. From that time onward a number of sailing ships, and afterwards of steam vessels, travelled from the Great Lakes to Europe and elsewhere, and European craft came up into the lakes. Mr. Cuthbertson tells of the very remarkable voyage of the little brigantine *Sea Gull*, of Toronto, in 1865. She sailed from that port to Durban, South Africa, and back to Toronto, in the same season. She took a cargo of Canadian farm machinery, waggons and flour. There does not seem to be any record of her return cargo.

Sailing ships were still to be used on the Great Lakes for many years, but with the introduction of steam their days were numbered, and the relationship between sail and steam craft gradually changed until in 1900 only a few sailing ships were left, engaged in local runs. In steam, also, the early type of wooden vessels with paddle-wheels gave place to propeller-driven steel craft, of ever-increasing dimensions, controlled no longer by individuals but by great shipping corporations. Toward the close of the nineteenth century motor vessels were launched on the Great Lakes.

Apart from lines of passenger steamers plying between such ports as Buffalo and Detroit, Toronto and Montreal, Detroit and Duluth, Sarnia and Fort William, Port McNicoll and Port Arthur, Chicago and Milwaukee, there are to-day on the Great Lakes various types of freight

steamer, some specializing in heavy bulk cargoes and others in package freight. The particular needs of the former have led to the designing of such remarkable lake craft as the *Whaleback*, and later types, of which the *Lemoyne*, of the Canada Steamship Lines, is an example. The *Lemoyne* was built at Midland in 1926; she is 633 feet long, and has carried such record cargoes as 571,885 bushels of wheat, and, on another occasion, 16,284 tons of coal. The company to which she belongs operates much the largest fleet of passenger and freight vessels on the Great Lakes and the St. Lawrence, over one hundred ships of various sizes and designs to meet the special needs of different kinds of passenger and freight traffic.

Among the larger American vessels on the Great Lakes is the *Carl D. Bradley*, of the Bradley Transportation Company, which carried 18,114 short tons of calcite the same year—1929—as the *Lemoyne* took her record wheat cargo. The Ford Motor Company operates two large motor ships, the *Henry Ford II* and the *Benson Ford*, each equipped with Diesel engines, and each of over 8,000 tonnage; and the United States Steel Corporation uses the *Myron G. Taylor* and the *Thomas W. Lamont* to bring ore down from Lake Superior. These are typical of the larger and more recently-built lake bulk freighters of United States registry. A number of package freighters, American and Canadian, are also employed handling general cargo, including automobiles. Among other unusual types of vessels on the Great Lakes is the motorship *Dolomite IV*, whose cargo compartments are lined with nickel so that she can carry highly corrosive chemicals such as lye and caustic soda.

*See an account of the investigation by the International Joint Commission at Sault Ste. Marie, regulating the levels of Lake Superior, in *Canadian Geographical Journal*, January, 1938.



To return for a moment to passenger vessels on the Great Lakes, the largest, such as the *Greater Buffalo* and the *Greater Detroit*, of the Detroit and Cleveland Navigation Company, compare in tonnage with all but the greatest of the bulk freighters, as well as with many of the ocean liners using the St. Lawrence route. They are 550 feet long, and can accommodate 1,200 passengers, but are markedly different from all ocean craft. In building them the company reverted to the side-wheeler type, but added the novel feature of a second rudder in the bow of the vessel to facilitate navigation in narrow waters. The fleets of passenger vessels, Canadian and American, not only take care of regular traffic between lake cities, but also offer summer cruises to Mackinac Island and Georgian Bay, Lake Superior, the Thousand Islands, and the Saguenay River.

It is not practicable here to do more than suggest in the briefest possible way the nature and extent of freight traffic to-day on the Great Lakes, aggregating in value \$3,000,000,000 annually. Bearing in mind that the greater part of it is the growth of a comparatively few years, it is interesting to know that in 1937, 113,836,956 tons of freight, of a total value of \$1,202,118,255, were carried on the Detroit River, and that the same year 87,633,600 tons went through the Sault Ste. Marie canals, American and Canadian, of a value of \$925,644,409. The combined tonnage the same year through the Panama, Suez, Manchester and Kiel canals amounted to about 83,000,000 tons. It is said authoritatively that more vessels pass up and down the Detroit River each season than in any other river, canal or port in the world. Traffic in 1937 through the Welland and St. Lawrence canals was 23,348,477 tons. There are at the present time 518 ships of American registry on the Great Lakes, of a gross tonnage of

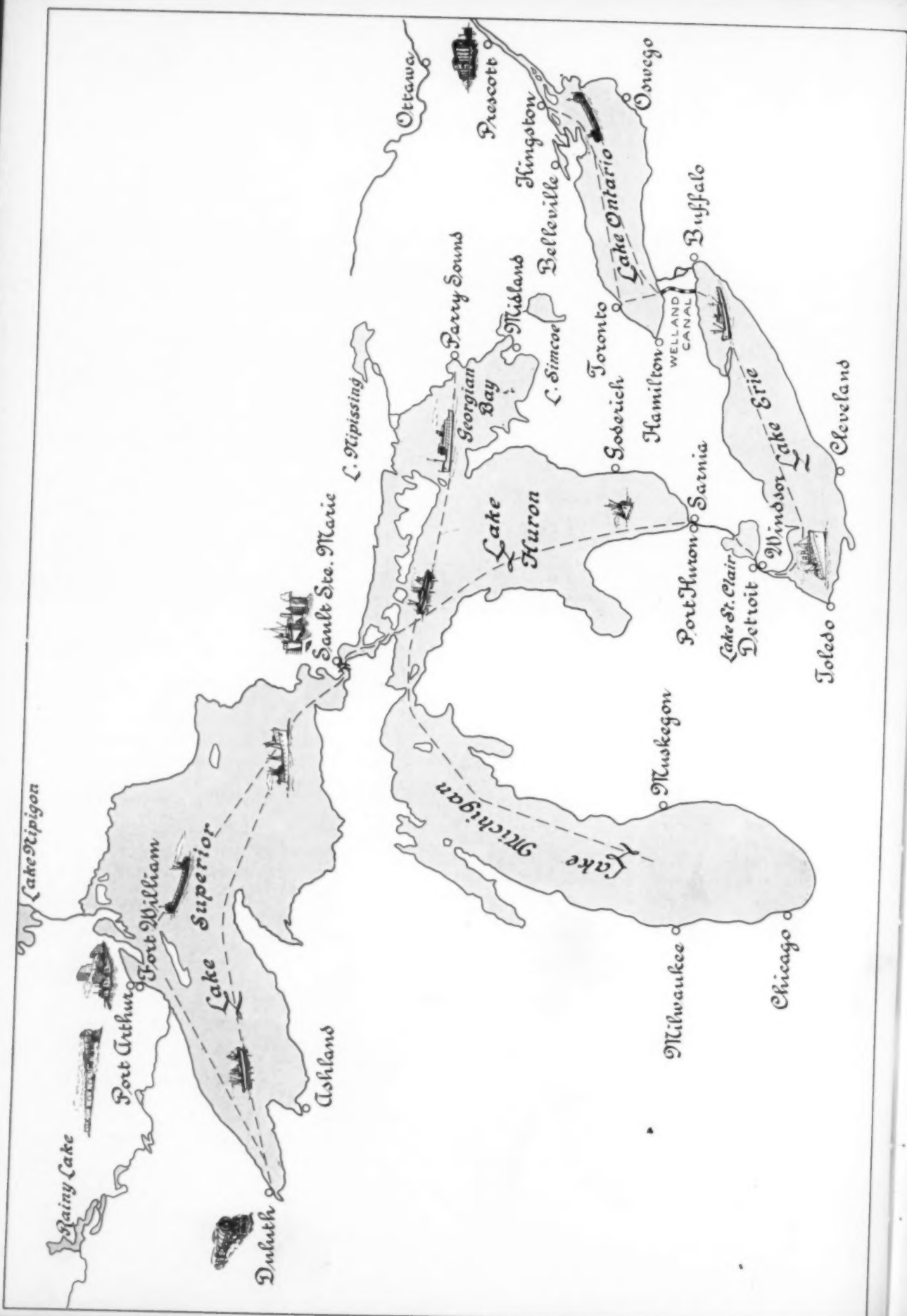
3,494,640, and 273 Canadian vessels of a tonnage of 934,950. These inland seas bear somewhat the same relationship to Canada and the United States as the Mediterranean does to the countries around its borders, and this fact lends significance to a statement by the Canadian writer, Frederick William Wallace, an acknowledged authority on maritime matters, that the population on the shores of the Great Lakes is greater than that bordering on the Mediterranean, and is rapidly increasing.

To make possible this immense traffic on the Great Lakes, the Governments of Canada and the United States have spent hundreds of millions of dollars in canals, the deepening of river channels, harbour improvements and various aids to navigation. Of the various Canadian harbours some like Toronto and Hamilton are controlled by Harbour Commissions maintained by the cities, others such as Fort William, Port Arthur, Collingwood and Owen Sound are administered by the National Harbours Board or the Dominion Department of Transport. Through them, as through similar harbours on the American side of the Lakes and their connecting rivers, passenger and freight traffic is fed to lake vessels, some of it destined to other lake ports, some to ocean ports near or far, while other vessels bring cargo from overseas or American coast ports to these harbours of the Great Lakes.

A memorable experience, if one is lucky enough to arrange it, is to travel from a Lake Erie port, such as Ashtabula, on one of the gigantic lake freighters, with coal to

Panoramic view of Kingston Harbour, at the foot of Lake Ontario. North from Kingston extends the Rideau Canal system a distance of 126 miles to Ottawa, which provided an alternative water route to Montreal when navigation on the St. Lawrence was menaced more than a century ago by American troops.







Bulk freighter in one of the four locks at Sault Ste. Marie, Michigan, which share with one at Sault Ste. Marie, Ont., all traffic between Lake Superior and Lake Huron. The total tonnage passing through these water-ways in eight months exceeds that for both the Suez and Panama Canals in twelve months.

Duluth or Two Harbours, on Lake Superior, and back with a cargo of iron ore. You go not as a passenger but as a guest of the company that operates the ship, and if you happen to be the only guest you will not only have very comfortable quarters but may have the privilege of eating with the ship's officers and learning from them much that is not easily heard elsewhere of the lives of men who go down to the inland seas in ore leviathans. And, if you do not mind the temporary inconvenience of coal dust or ore dust, you will have the opportunity of seeing the amazingly efficient methods of loading and discharging coal and iron ore.

The development of transportation, briefly sketched in the foregoing pages, has been very largely regional, in the sense that it has been confined to the Great Lakes and their connecting rivers. There has been some traffic between the lakes and ocean ports, but its extent and character have been strictly governed by the 14-foot depth in the St. Lawrence canals. The fact that the locks of the Welland Canal have a depth of 30 feet is of no present significance, in so far as a deep water-way from the head

of the lakes to the sea is concerned. The reaches of the Welland Canal are limited to 25 feet, the canals and river channels above Lake Erie are only 20 feet, and the effectiveness of these, as water thoroughfares to the sea, is controlled by the 14 feet in the St. Lawrence canals. Until all channels, natural and artificial, from the head of the lakes to the sea have been deepened to 30 feet it will hardly be practicable to justify the expenditure on the Welland Ship Canal, or to realize the possibilities of commerce between the Great Lakes' region and overseas. In other words, without going into the many other arguments for or against a deep water-way from Lake Superior to the sea, the water-way itself must be completed before commerce can be developed. And, as has been already suggested, it would seem to be of such obvious advantage to the increasingly important region tributary to the Great Lakes that it is bound to come some day, the actual time depending largely upon the rate of pressure of those who feel that they need the water-way upon those who believe, rightly or wrongly, that it may hurt rather than help themselves.



Self-unloading freighter at the Lake Erie entrance to the Welland Canal. Vehicular and rail traffic passes over the two bridges shown here when lowered to ground level.



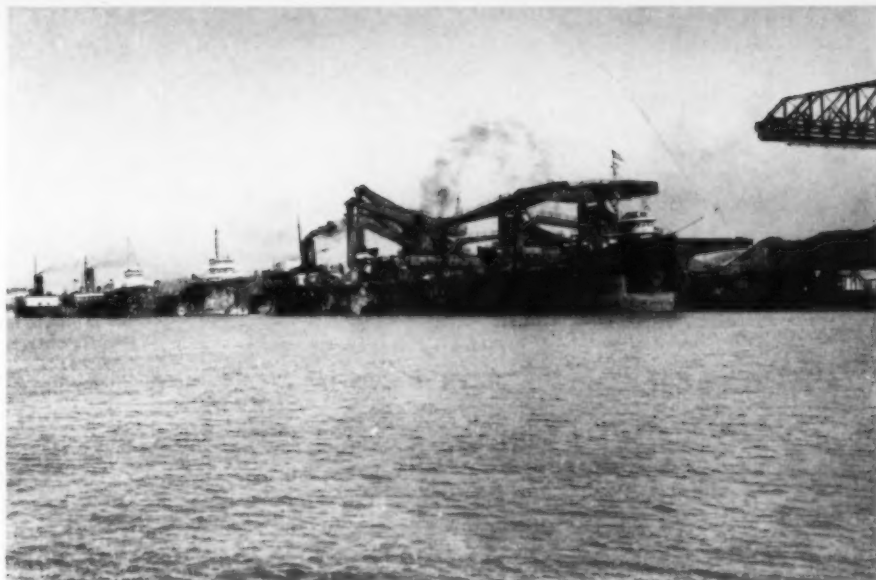
Limestone being discharged at Cleveland, Ohio, by the self-unloading S.S. "J. L. Reiss". The pile is 65 feet high, and overlooks the ship's pilot house.



Coal being discharged at Sault Ste. Marie, Ont., from a large lake freighter. Clam shell buckets with a capacity of four tons handle some 10,000 tons in approximately 24 hours.

Photos courtesy Lake Carriers' Association, Cleveland, Ohio.

Pennsylvania Railroad dock at Cleveland, Ohio, where four large Hulett type ore unloaders can discharge 10,000 tons in less than five hours; seventeen tons being handled each "dip".



Bascule railway bridge at Port Arthur, Ont., which is raised to permit the passage of lake steamers from the inner harbour.

Twin operations at one of the Upper Lake ports. Grain is being taken aboard this bulk freighter from the spout in the foreground, while grain is being discharged by means of the elevator leg some thirty feet further astern.

Courtesy Sarnia Chamber of Commerce.



Below: — Dwarfed by the sky-scrapers of Detroit, a passenger vessel of the Canada Steamship Lines sails serenely down the international waterway that flows into Lake Erie.

©—Associated Screen News.





Ambassador Bridge, whose central span is 1,850 feet, traverses the Detroit River and provides a picturesque link between the "auto-mobile" cities of Detroit and Windsor.

Below:—Sandwich, Ont., as seen from atop the pylon on the Detroit side of Ambassador Bridge. The length of a typical bulk freighter passing below is well illustrated.



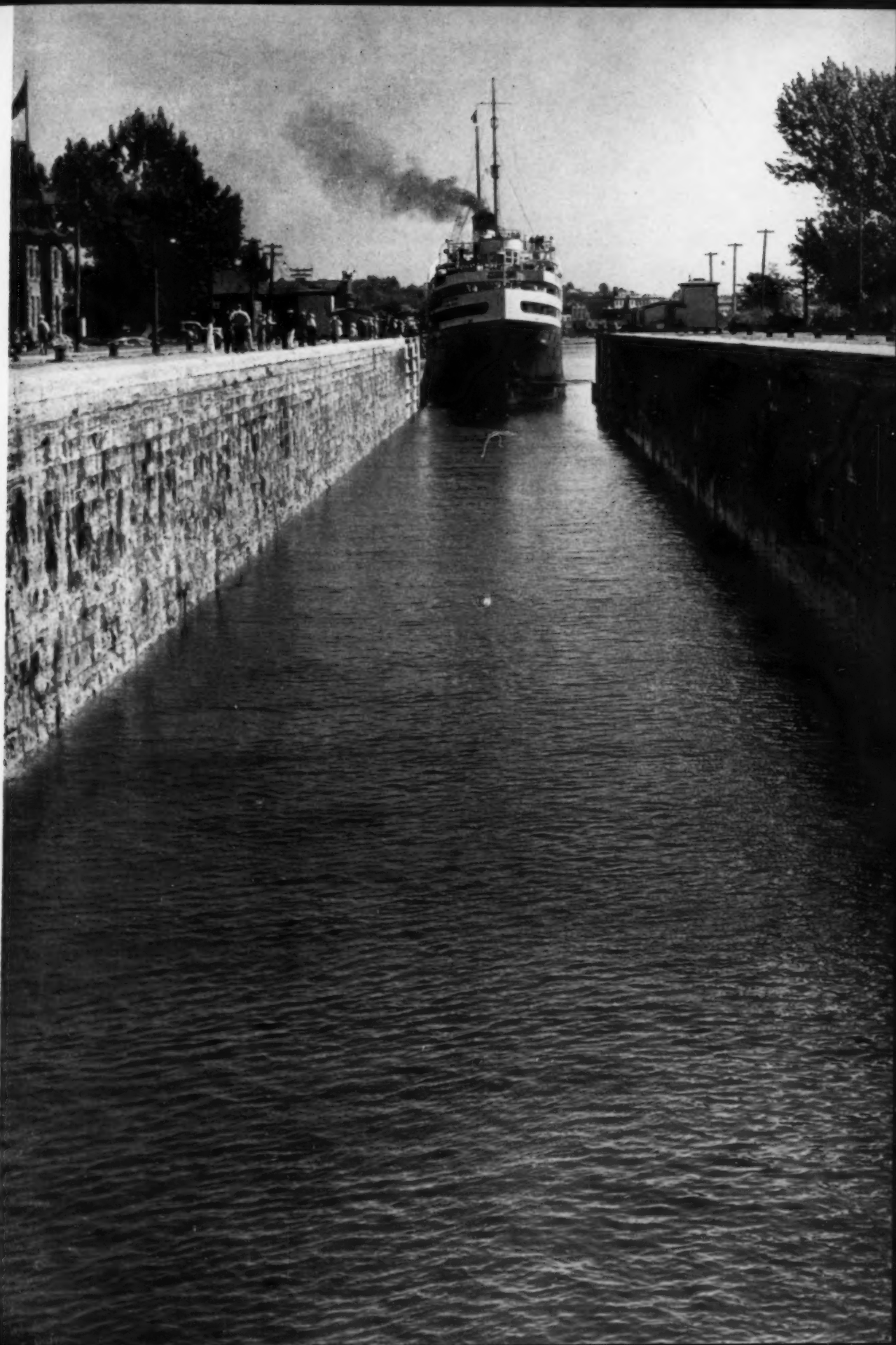


Eastern terminus in the Port of Montreal of the great inland water-way that extends 1,223 miles from the lower lock of the Lachine Canal to Fort William, and even further to Duluth. Although small foreign steamers of less than 270 feet and drawing no more than fourteen feet pass up through the St. Lawrence canals, ocean navigation proper ends at Montreal.

© Canadian Airways, Limited.

Right: — Forty-seven miles west of Lake Huron, and the link with Lake Superior, the single Canadian lock at Sault Ste. Marie has a length of 900 feet, being the longest in this country. Through this pass large bulk freighters and steamers with passengers, as here illustrated, thereby circumventing the St. Mary's Rapids.

Courtesy Canada Steamship Lines.

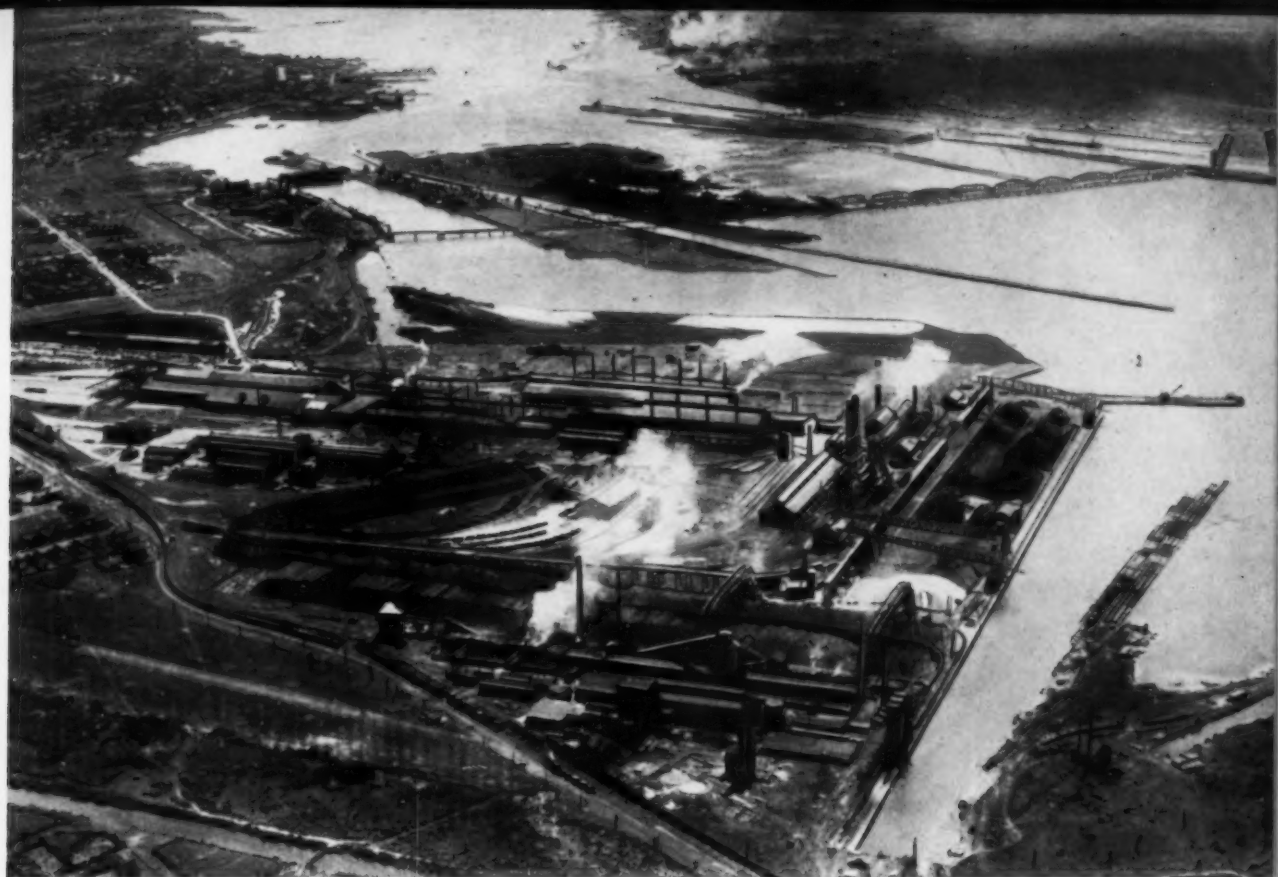




Duluth, at the western extremity of Lake Superior, whose 49 miles of frontage are lined with forty-six wharves, 21 coal docks, 7 iron ore docks, 24 grain elevators, one cement elevator and several shipbuilding berths. Heavy shipments of iron ore are made from this port, whose annual commercial tonnage ranks second to that of New York in North America. The "lift" bridge illustrated in the lower photograph replaced in 1928 a unique aerial ferry having a capacity of 62½ tons.

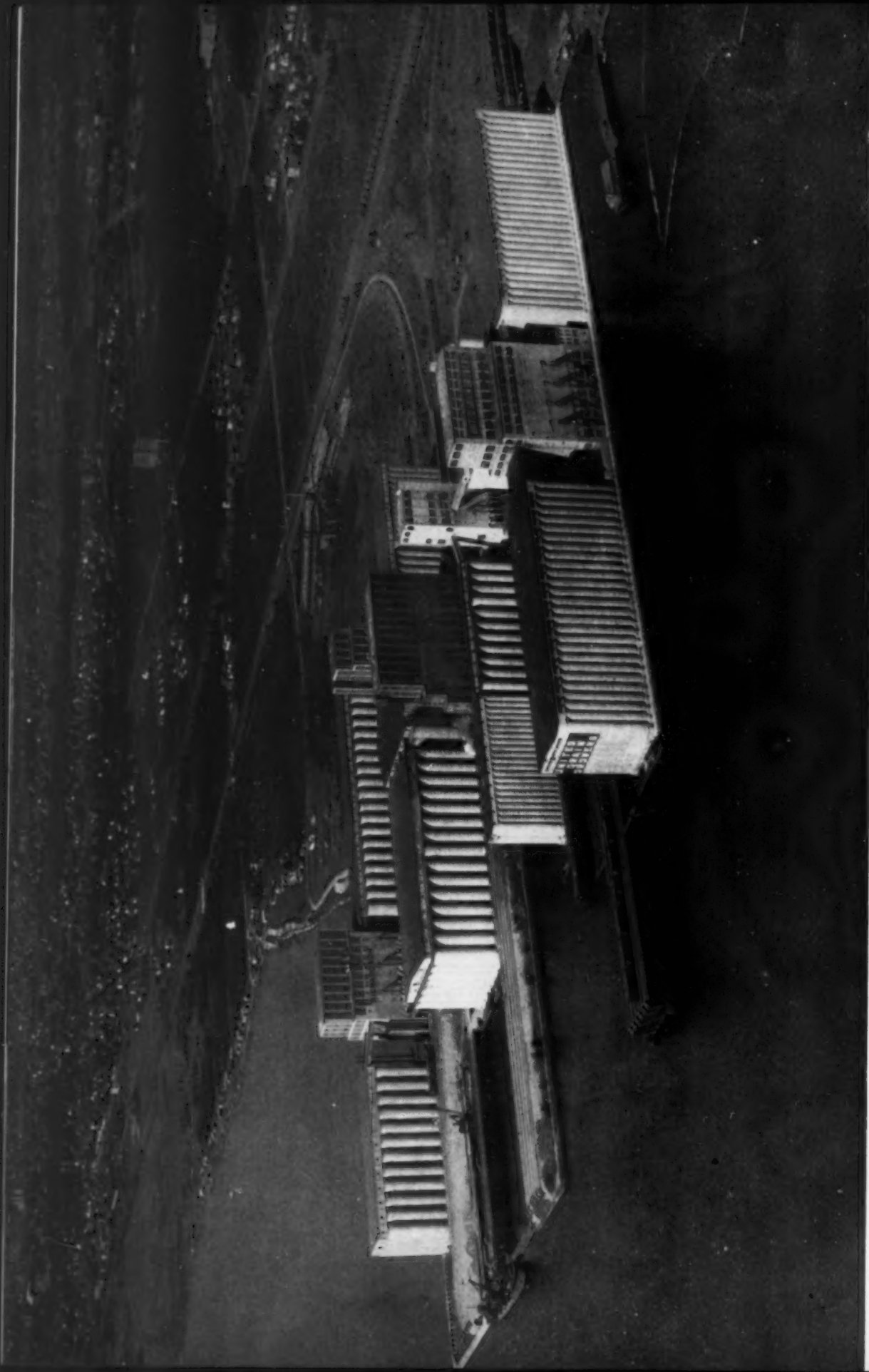
Photos by Duluth Chamber of Commerce and Associated Screen News.





St. Mary's River, which carries the waters of Lake Superior into Lake Huron, flows past the plant at Sault Ste. Marie, Ont. of the Algoma Steel Corporation (above). In the background may be seen the single Canadian lock, and beyond the series of four American locks through which large grain and ore carriers are handled. Below:—Close-up aerial view of Canadian lock, power station and steel plant in the background.





A few of thirty water-front elevators at the twin ports of Fort William and Port Arthur, on Lake Superior. These terminal warehouses (13 at Fort William and 17 at Port Arthur) have a capacity of approximately 98,000,000 bushels of grain, the largest ranging up to 7,000,000 bushels. During the 1928 season of navigation, over 423,925,000 bushels of grain were handled at these two ports, and on November 28, 1922, a daily record was established when nearly seven million bushels were delivered to 28 lake freighters. These ports are 1,220 miles from Montreal by water.

these ports are 17,220 miles from Montreal by water.



Terminal facilities at Toronto enable passengers desiring to make a lake or river cruise to embark with or without their automobiles. Package freighters handle a large quantity of general cargo, while in other sections of the harbour special provision is made for the discharge of coal, oil and other bulk cargoes.—Courtesy Canada Steamship Lines.



Harbour at Milwaukee,
Wis., on Lake Michigan.



Port of Buffalo, N.Y., at
the eastern end of Lake
Erie.



Coal terminals at Oswego,
N.Y., at the south-eastern
end of Lake Ontario.

Bulk freighter and passenger
steamer passing down the
St. Clair River in the
vicinity of Sarnia, Ont.



Section of the Port of
Toronto, Ont., on the north
shore of Lake Ontario.

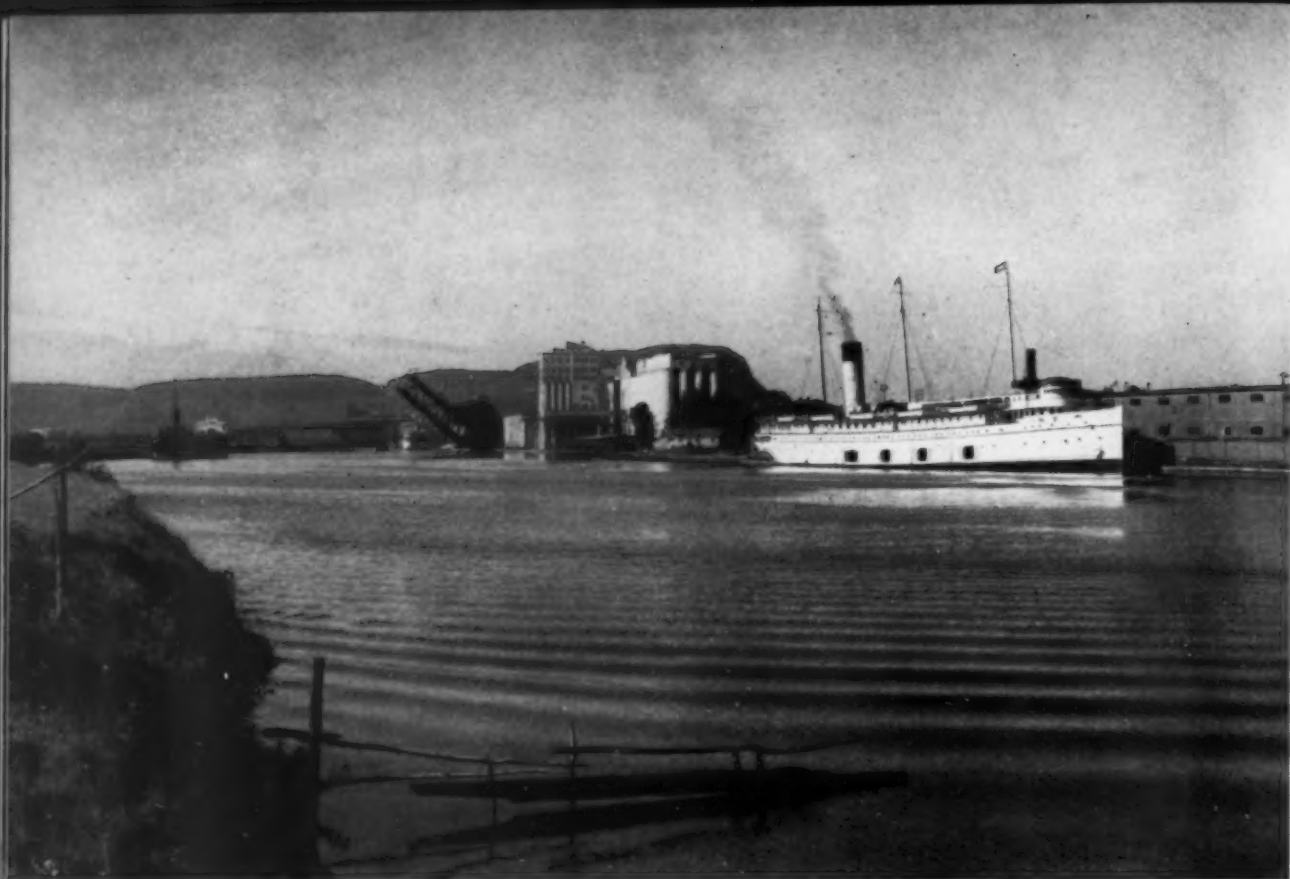


Coal and other docks at
Midland, Ont., at the
southern end of Georgian
Bay.

Port of Cleveland, Ohio,
on the south shore of
Lake Erie.



Grain elevators at Midland,
Ont., one of the transfer
ports on the Great Lakes.



Passenger and cargo steamer Assiniboia leaving Fort William, Ont., on Lake Superior, for Port McNicoll, Ont.

Port McNicoll, on Georgian Bay, Ont., is 954 miles by water from Montreal. Many passengers call here aboard lake steamers, transferring from boat to train or vice versa, while general cargo is handled in large volume.

C.P.R. Photos.





Hamilton, as an industrial centre, is well-equipped to handle by water raw material inward and finished products outward. The plants here illustrated are the Proctor & Gamble Co. of Canada, Limited, and the Dominion Foundries & Steel, Limited.
© Canadian Airways, Limited.

Two-way canal entrance to the expanse of water that provides Hamilton with a natural harbour on the north shore of Lake Ontario. During the record year of 1937, the port handled 2,747,830 tons of shipping.





This room, now known as the Confederation Chamber, was formerly the Legislative Council Room, and after the abolition of the Council in 1893 it was used as an office, until a few years ago, when it was devoted entirely to historical purposes. The moving spirit in converting this room into a national shrine was Mr. H. R. Stewart, now of Ottawa, but at that time Deputy Provincial Secretary of Prince Edward Island. He spent much time, energy and enthusiasm in locating and collecting portraits, photographs and documents of the lieutenant-governors, premiers, etc., which now adorn its walls.

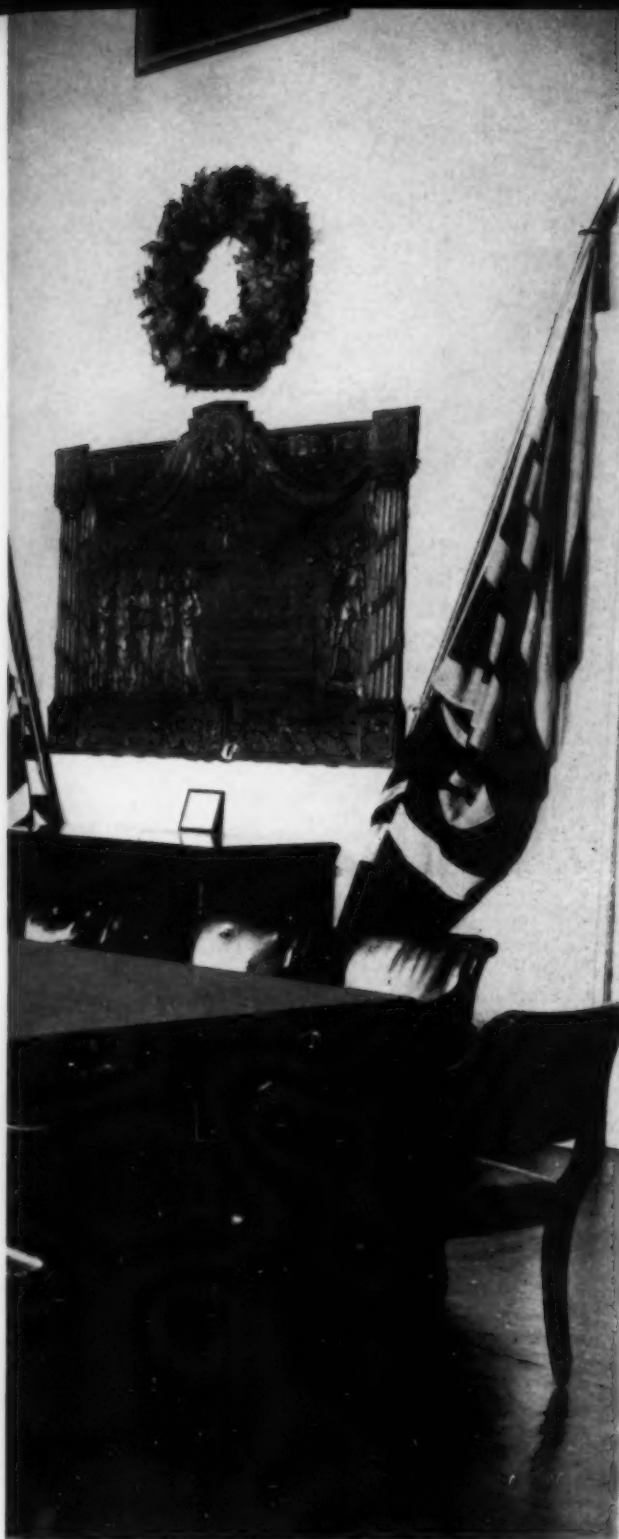


THE CHARLOTTETOWN CONFERENCE REVIVED

by D. C. HARVEY

ONE of the most significant events in our history was the organized pilgrimage, during the summer of 1939, of Canadians to their national shrine in Prince Edward Island to commemorate the seventy-fifth anniversary of the Charlottetown Conference, the first in that series of conferences which issued in Confederation. This celebration differed from the original conference in many ways, apart from its purpose which was purely commemorative. In this instance the initiative came from Prince Edward Island and all arrangements were made by Islanders, though with the financial assistance of the Federal Government. In this instance, also, the attitude of the Islanders towards Confederation presented a marked contrast to their persistent opposition between 1864 and 1873.

The original Charlottetown Conference had its origin in an attempt on the part of statesmen in Nova Scotia and New Brunswick to effect a legislative union of the Maritime Provinces. The project had been frequently discussed as an alternative to federal union of all the colonies; and in the winter of 1864, when United Canada was preoccupied with economic and constitutional problems peculiar to itself, the legislatures of Nova Scotia and New Brunswick had passed resolutions providing for a conference to arrange a preliminary basis of union. Prince Edward Island at that time was afraid of committing its future to such a conference and, consequently, would consent only to the appointment of delegates to consider the



Left:—This historic Province Building, completed in 1848, has been the scene of many important functions, provincial, imperial and international. In it the Charlottetown Conference sat from September 1st to 7th inclusive, and on the 8th a ball and banquet were given to the visiting delegates and their friends together with the members of both branches of the legislature and the principal office-holders of the colony.

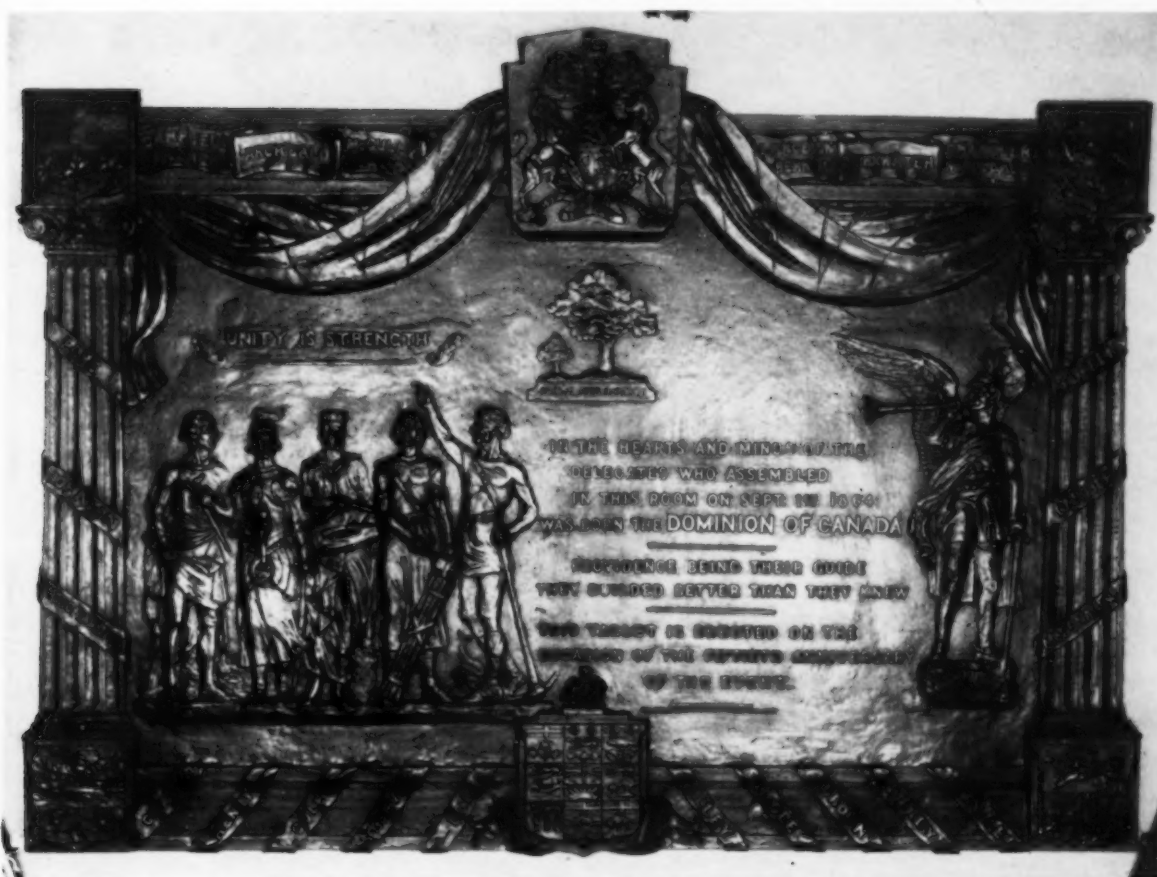
expediency of such a union. It was no doubt this diffidence of Prince Edward Island that led the two larger colonies to suggest Charlottetown as a place of meeting, both as an act of courtesy and as a token of generous consideration in the future. Hence, it transpired that the most aloof of the colonies concerned had the distinction of entertaining the first in a series of three conferences which ultimately achieved Confederation — although the Island itself did not enter the union until seven years after it had been formed—and has consecrated the chamber in which the delegates to the original conference sat as a national shrine.

It is encouraging to think, in these days of uncertainty and disunion both national and international, that an idea once embodied in institutions, however reluctantly, has such tenacious vitality, and that a *fait accompli* can be idealized to appear as if it had always been the thing most ardently desired. Certainly a constitution which has had a history of three-quarters of a century tends to persist by the law of inertia and cannot be disrupted unless operated upon by a much stronger force than that which first brought it into being. Certainly, too, on this seventy-fifth anniversary of the Charlottetown Conference there was no suggestion of criticism of the Fathers of Confederation, nor hint of defective workmanship which they could have been expected to foresee or which could not be remedied now if the same ability and earnestness should be manifested by contemporary statesmen. On the contrary, all the representatives of the various provinces and of the Dominion entered into the spirit of commemoration with zeal, while the Islanders excelled themselves in hospitality. The gods, too, were kind, and only one small thunder-cloud was permitted to darken for a moment the brilliant sunshine of the week's festivities.

The student of history cannot fail to see the influence of geography upon the mentali-

ty of an island people; and in this instance it applies both to the early aloofness of the Islanders from union with the people of the mainland and their subsequent description of their capital as the "Cradle of Confederation". Even the Micmacs had refused to associate with Jacques Cartier and his followers, when they landed at North Point, P.E.I., on July 1st, 1534, and had shown no anxiety to barter their own products for European commodities. The British settlers of the eighteenth and nineteenth centuries, operated upon by the same geographic forces, had developed the same spirit of self-sufficiency and were reluctant to surrender any of their prerogatives until at least a promise of regular and continuous communication both summer and winter, had for all practical purposes mopped up the Strait of Northumberland and joined the Island to the mainland. Then they entered Confederation gladly and on July 1, 1873, celebrated Dominion Day with such spirit that Lord Dufferin wrote Sir John A. Macdonald, "I found the Island in a high state of jubilation and quite under the impression that it is the Dominion that has been annexed to Prince Edward; and in alluding to the subject I have adopted the same tone."

The festivities continued throughout the week beginning July 16th and provided entertainment for all through aquatic sports, yacht races, horse races, concerts, parades, tournaments, community dancing, picnics and fireworks; but the most relevant features of the celebration were enacted on Monday and Wednesday. On Monday morning the keynote was struck in the unveiling of tablets to the seven Fathers of Confederation from Prince Edward Island. The tablets had been prepared by the Historic Sites and Monuments Board of Canada and their unveiling at this time, by descendants of the "Fathers", gave the official representatives of Canada and its provinces an opportunity to revive the atmosphere of the Charlottetown Conference. Premier Thane A. Campbell of



Tablet erected in Charlottetown, P.E.I., to commemorate in 1914 the fiftieth anniversary of the birth of the Dominion of Canada.

Prince Edward Island presided at this function as Premier J. H. Gray had done at the original conference, and Lieutenant-Governor George DeBlois welcomed the representatives of the various provinces and the Dominion. Premier A. L. Macdonald, Premier A. A. Dysart, Hon. Onésime Gagnon and Hon. Colin A. Campbell spoke on behalf of Nova Scotia, New Brunswick, Quebec and Ontario respectively, the four original provinces to enter Confederation, and Hon. T. A. Crerar, Minister of Mines and Resources, spoke on behalf of the Dominion Government. On the platform were four other federal ministers, Hon. C. D. Howe, Minister of Transport, Hon. J. L. Ilsley, Minister of National Revenue, Hon. Norman McLeod Rogers, Minister of Labour, and Hon. N. McLarty, Postmaster General.

Manitoba was represented by Premier John Bracken and Lieutenant-Governor W. J. Tupper, the son of Sir Charles Tupper, and Saskatchewan by Hon. J. W. Estey, Minister of Education. Besides these there were a number of federal senators and members of the House of Commons and visiting judges who gave the celebration a marked Canadian character. Among the latter was another son of the Fathers, Justice L. P. D. Tilley of New Brunswick.

After the addresses of the provincial and Canadian representatives had been delivered the representative of the Historic Sites and Monuments Board proceeded with the unveiling of the tablets. The tablet to Col. John Hamilton Gray was unveiled by his daughter, Mrs. Artemas Lord, who attended the social functions

of the Charlottetown Conference with her father and also went with him to Quebec. The tablet to Hon. Edward Palmer was unveiled by his grandson, His Honour Judge Harold L. Palmer; that to Hon. George Coles by his grandson, Mr. C. H. B. Longworth; that to Hon. Edward Whelan by Dr. E. J. Mullally, a member of the Irish Historical Society to Canada; that to Hon. A. A. Macdonald by his nephew, Mr. J. Howard Macdonald; that to Hon. Thomas Heath Haviland by a great nephew, Mr. Thomas DeBlois; and that to Hon. W. H. Pope by his grandson, Mr. H. R. Stewart.

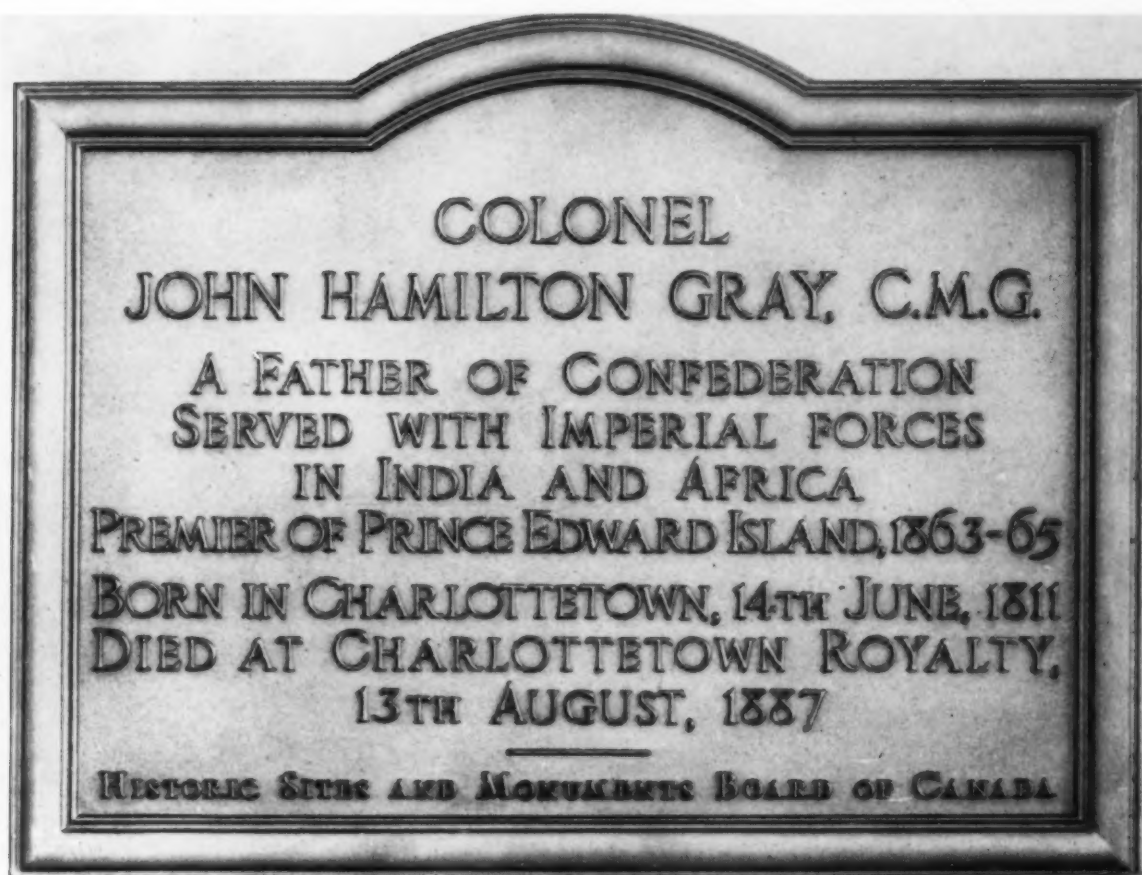
It will be noted in the accompanying inscriptions that, while each of these statesmen was distinguished for other achievements, the one line common to all is *A Father of Confederation*.

On Monday afternoon an elaborate historical parade was featured, representing

by floats the most significant event in the history of each of the nine provinces of Canada; and in the evening an historical pageant was presented in which the Fathers of Confederation returned to Charlottetown, invoked the goddess of history and conjured spirits from the past to produce with soft music and winged words a gorgeous and illuminating spectacle of the province on parade. The pageant was followed by a ball in Government House, to which all the guests of the province, the civil and military officials, and the officers of the four naval vessels in the harbour were invited. Besides H. M. C. S. *Skeena* and H. M. C. S. *Venture*, the United States destroyer *Hamilton* and the French *Ville d'Ys* were in port throughout the celebration and lent their support to the various parades and social activities.

The lieutenant-governors of Manitoba and Prince Edward Island and those who unveiled the tablets to the Island Fathers of Confederation. From left to right: Hon. W. J. Tupper of Manitoba, Hon. George Desbrisay DeBlois of Prince Edward Island, Mrs. Artemas Lord, Judge Harold L. Palmer, Mr. C. H. B. Longworth, Dr. E. J. Mullally, Mr. J. Howard Macdonald, Mr. Thomas DeBlois, and Mr. H. R. Stewart.





One of seven tablets unveiled in Charlottetown last July to the seven Fathers of Confederation whose names appear on this page, together with data concerning them inscribed on the plaques.

EDWARD PALMER

A Father of Confederation
Premier of Prince Edward Island, 1859-63
Chief Justice of Prince Edward Island, 1874-1889
Born in Charlottetown, 1st September, 1809
Died in Charlottetown, 3rd November, 1889

GEORGE COLES

A Father of Confederation
Thrice Premier of Prince Edward Island:—
1851-54, 1855-59, 1867-69
Born in Charlottetown, 20th September, 1810
Died in Charlottetown, 21st August, 1875

EDWARD WHELAN

A Father of Confederation
Journalist, orator, and advocate of
free land, free schools and responsible government
Born in county Mayo, Ireland, 1824
Died in Charlottetown, 10th December, 1867

ANDREW ARCHIBALD MACDONALD

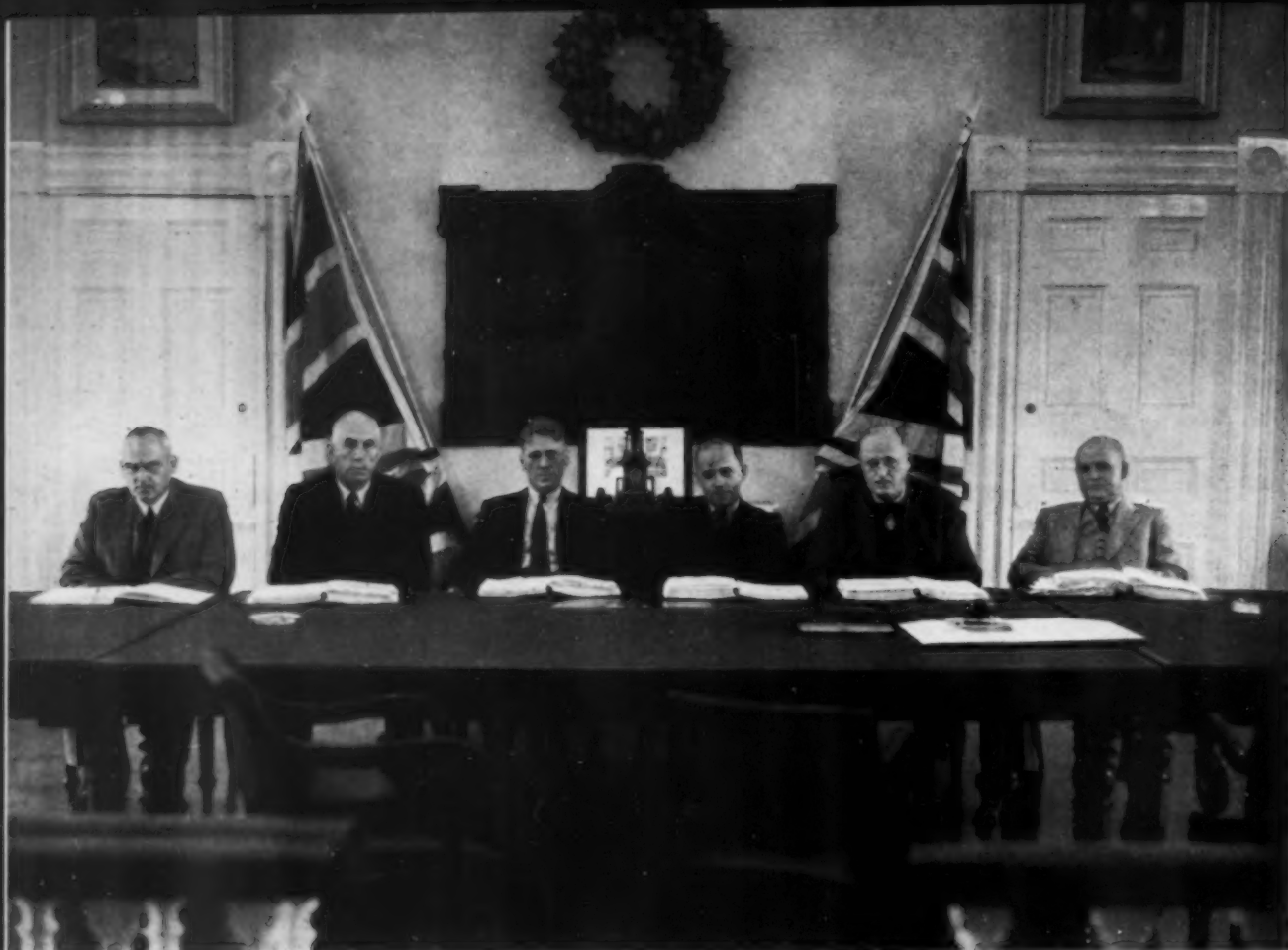
A Father of Confederation
Senator, 1891-1912
Lieutenant-Governor of Prince Edward Island,
1884-89
Born at Brudenell Point, 14th February, 1829
Died in Ottawa, 21st March, 1912

THOMAS HEATH HAVILAND

A Father of Confederation
Senator, 1873-79
Lieutenant-Governor of Prince Edward Island,
1879-1884
Born in Charlottetown, 13th November, 1822
Died in Charlottetown, 11th September, 1895

WILLIAM HENRY POPE

A Father of Confederation
Legislator and journalist
Judge of Prince County Court, 1873-79
Born at Bedeque, 29th May, 1825
Died in Summerside, 7th October, 1879



The Treasury Board of the Dominion Government in the Confederation Chamber, Provincial Building, Prince Edward Island. The five federal ministers from left to right are: Hon. C. D. Howe, Hon. T. A. Crerar, Hon. J. L. Ilsley, Hon. Norman McLeod Rogers and Hon. Norman A. McLarty. Mr. W. C. Ronson, Assistant Deputy Minister of Finance, is on the extreme right.

Convention at Charlottetown, Prince Edward Island, of delegates from the legislatures of Canada, New Brunswick, Nova Scotia, and Prince Edward Island, to take into consideration the union of the British North American Colonies—September 1, 1864. The twenty-four men represented in this group are: Col. the Hon. John Hamilton Gray, Hon. John A. McDonald, Hon. Georges E. Cartier, Hon. Thomas D'Arcy Magee, Hon. William A. Henry, Hon. William H. Steeves, Hon. John M. Johnson, Hon. Samuel Leonard Tilley, Hon. Robert Dickie, Lieut.-Col. John Hamilton Gray, Hon. Edward Palmer, Hon. Edward Botsford Chandler, Hon. H. L. Langevin, Hon. Charles Tupper, Hon. A. J. Galt, Hon. Adams G. Archibald, Hon. Andrew A. McDonald, Hon. Alex Campbell, Hon. William McDougall, Hon. William H. Pope, Hon. Jonathan McCully, Hon. George Coles, Hon. George Brown, Major M. Barnard, Mr. Charles Drinkwater.



THE CHARLOTTETOWN CONFERENCE REVIVED

On Wednesday two other events of national significance were featured on the programme. The first was the official opening of the Anne of Green Gables Golf Course and National Park which was done in a spirit that would have been approved by Anne herself, through a golf match between Hon. T. A. Crerar, Minister of Mines and Resources including national parks, and Hon. C. D. Howe, Minister of Transport. A whimsical touch was given to the event when the "Minister of National Parks" was defeated on his own ground by the "Minister of Air" and ascribed his defeat to the "unfermented grape juice" which Prince Edward Island prescribes for its guests.

The other significant event was the meeting of the Dominion Treasury Board in the Confederation Chamber. This meeting was attended by the five members of the federal cabinet who were in Charlottetown and was presided over by Hon. J. L. Ilsley, Minister of National Revenue. It was a friendly gesture of the Prime Minister, who regretted keenly that he himself could not be present, and was the first instance of a regular department of the Federal Government functioning outside the Capital.

These two functions of Wednesday, therefore, may be regarded as symbolic of Canada's importance to Prince Edward Island, while the major events of Monday's programme were designed to illustrate Prince Edward Island's contribution to Canada.

In concluding this brief summary of the significant features of this celebration, one cannot ignore the contrast in means of

communication and transportation between 1864 and 1939. In 1864 communication between the Island and the mainland was regular but limited and slow, in winter it was intermittent and often impossible. In 1939 regular and adequate communication was provided throughout the winter and, during this celebration, two car-ferries crossed and recrossed the Strait of Northumberland repeatedly, carrying unlimited numbers of passengers and motor vehicles with ease and despatch. To attend the celebration the Minister of Transport and his colleagues en route from Ottawa to Charlottetown were in the air only four hours, while even by rail, visitors came from Halifax, St. John and Montreal in less than twenty-four hours. Moreover, the modern news services and radio flashed accounts of each day's proceedings across the continent as soon as they transpired so that the effects of this celebration were widespread and immediate.

Though all these improvements cannot be ascribed to Confederation, it can be said at least that without union the scattered British North American provinces could not have shared as effectively in the march of progress, and that without these improved means of communication they could not be united as closely as they are or hope to become. It is, therefore, fitting that the significance of the Charlottetown Conference should be commemorated from time to time in such celebrations as this. In the words of Prime Minister King, "They will do much to keep alive and clear in our own day the prophetic vision of the Fathers of our Confederation."

The departure of federal ministers from Charlottetown for Montreal, July 20th, 1939. On board were Hon. C. D. Howe, Hon. Norman McLeod Rogers, Hon. J. L. Ilsley, Hon. T. A. Crerar and Hon. N. A. McLarty.





A Yellow-headed Blackbird clings to a dead cat-tail.

BIRD LIFE ON THE CATTLE RANGE

by J. A. MUNRO

NORTH from the Rio Grande to the Chilcotin plateau of British Columbia is a vast region of open spaces which has fascinated the adventurous of many generations since the first conquistadores in helmet and breastplate scaled its lofty, mountain barriers. This is the cattle country, the true "West" of song and story, of legend and romance. It is a land of great distances, four-square to the winds of heaven, of valleys, hill-slopes and plateaux; great mountain ranges guard its flanks and mighty rivers course through it and down age-old canyons to the sea. It is a land of deserts shadowed by lofty peaks, of fertile plains giving way to foot-hills, of forests that sweep up mountain slopes to timber-line, of creek bottoms green with cottonwoods, of eroded hills and mesas extravagantly coloured, of poplar draws and bunch-grass slopes, of lakes deep and crystal clear, of meadow and marsh, of slough and alkaline lake and soda sink.

The interior of British Columbia contains the upper end of this vast semi-arid region—the former empire of the cattle kings. Although this is the dry-belt, the climate is more kindly than is the case farther south; rain comes with some regularity and in its season snow blankets the hills. Different, yet essentially the same, this northern end of Trans-Montana has its closest affinity with the region to the south, an affinity not only of vegetation and animals but of human folk-ways. Northward is the boreal forest, to the east over miles of mountains are the plains, and westward is the sea.

Of all valleys and plateaux in British Columbia's dry belt the Cariboo region perhaps is the most exciting. The social life there is old, as age in this province is counted, for it dates from the early gold rush of the sixties and much Western Canadian history relates to this region and the various activities which took place there.



The tall young of the Prairie Falcon shrouded in white.

Hard upon the heels of the early placer-miners and their boom-camps came the cattle-men and the famous Cariboo Road built by the Royal Engineers. Cattle ranchers acquired vast holdings of hilly range and marshy hay lands; their ranch buildings were built close to the road which was their sole connection with the outside world. The ranchers sold their produce to the miner; they fed and housed the travellers, their oxen, their mules, and their horse teams.

Fundamentally, conditions are as they were fifty years ago except for the changes brought about by technical developments. The prospector with pan and rocker still persists alongside the modern hydraulic placer-miner; the old cattle ranches and their stopping-places, 70-Mile House, 100-Mile House, and others long famous, carry on, some with modern lodges or auto cabins. They still feed the travelling public but the character of the traveller has changed, the bull-whacker and the mule-skinner have given place to the motor mechanic and bus-driver.

This inter-mountain Canadian West which once drew the pioneer prospector, the fur trader and the cattlemen, now is a magnet to the bird student. The ornithologist is a creature of imagination. In retrospect he recalls the heady air, the evening pastel background of the clear-cut hills, and the long twilight that so slowly meets the night. His tongue lingers on the rare flavour of its place names, Okanagan, Similkameen, Cariboo, Lac La Hache, Kleena Kleen, Chezzacut, Anahim, and



abiding with him are the sights and sounds of the birds he encountered and the intimate observation that some permitted.

The Cariboo includes the largest nesting ground for waterfowl in British Columbia and supplies an important contingent to the armies of ducks and geese that move south and south-west each fall. This important resource, although greatly reduced, is still of great value to the Cariboo. Mallards nest near every slough, pot-hole and beaver meadow; in the marshes are Canvas-back, Redhead, and Ruddy Duck. Lesser Scaup ducks, or "blue-bills", occupy many of the large, shallow, alkaline lakes with open shores where freshwater shrimps provide an abundant food supply. And to these lakes also the young of the tree-nesting ducks, Barrow's Golden-eye and Buffle-head, are brought by the female parent so that they become important waterfowl nurseries during the summer months.

The serious student of the live bird is of necessity an ecologist. He realizes that his subjects are the product of their environment and may not be understood as separate phenomena. They live and function, increase and decrease, as part and parcel of a natural organization that functions according to definite laws. It is his aim to interpret objectively these laws in terms of human understanding. Being a naturalist, therefore it follows that he is an economist and would preserve so much of wild nature as a modern competitive social system will permit.

An activity of this kind is productive of adventure, not that of hair-breadth escape and emergencies surmounted, but the adventure that goes with exploration of the unknown, whether of a physical environment or a less tangible psychological world of bird behaviour.

In nesting time whether on grassy benches, or in forest or marsh, the opportunity for close observation of birds is most assured.

That grand, upstanding, dry-land wader, the Long-billed Curlew is an individualist with unqualified objections to human intrusion on his nesting territory. Towards an intruder approaching their grassy haunts they come from afar, sometimes a dozen, more likely singly or

- (1) Greater and Lesser Yellow-legs on Mirage Lake.
- (2) A female Ring-necked Duck on the nesting grounds.
- (3) Greater Yellow-legs on a meadow pond. (4) A female Lesser Scaup swims back and forth near her nest.

in couples, and swoop towards him. The wind whistles through bowed wings and the curved, six-inch, scissor bill opens and closes to omit an excited tremolo of wild cries. The cry of the Long-billed Curlew! It is associated with grassy, wind-swept uplands of Nicola and Kamloops pastures on a May morning, with great cumulus clouds billowing from the horizon and the feel of bunch-grass underfoot.

The Bald Eagle, more often than not, is seen, circling high above a mountain valley or decorating the topmost limb of a tall cottonwood beside some mountain lake from which lofty vantage point he launches forth into space while the observer is yet far off. Usually a wary and solitary recluse in these regions, he is oblivious to the desires of the bird watcher.

But nesting time tempers eagle wildness and impels close guarding of the home while the eggs are incubated and the young raised to the flying stage. Later in the summer the young bird may return daily, long after the parents have departed, to the broad stick platform that was its birth-place.

The Prairie Falcon is of the wilderness, aloof, unfriendly, and streamlined for speed. For a close inspection one must climb to an eyrie, always on some shelf or pocket on a cliff face, when young are being nurtured. But here nothing but a hostile reception may be expected. The female, chattering an angry, whistled call, planes downward on powerful, pointed wings as if to sweep the unwelcome visitor from the cliff. Time and again she descends, climbs upward, circles high in the air and glides down again. Meanwhile the tall young, shrouded in white down, stand comically upright and view the scene with unconcern.

The Chalk range frowns down on a plain of jack pine forest, willow swamp, and open prairie studded with lakes. Spring comes slowly to this region and alpine-nesting birds — Arctic Horned Lark, Pipits, and Hepburn's Rosy Finch — linger on the open places days after all have left the valleys below.

Certain open-shored lakes, well stocked with animal food, provide an everchanging picture of bird life. Such a one is Mirage Lake whose milky, soda-impregnated



(1) Nest and eggs of Ruddy Duck. (2) Nest and eggs of Pintail. (3) Loon's nest on a muskrat house. (4) Nest and eggs of the Pied-billed Grebe.

waters abound with Water-boatmen and the curious little Fairy shrimp. Here in the spring come flocks of diving ducks, pond ducks, and geese; later on ducks will lead their half-grown broods there to feed on this abundance and to mingle with other post-breeding, flightless male ducks that find sanctuary on the wide expanse of water. Early July sees the first of the south bound migrant waders, Greater and Lesser Yellow-legs from nesting grounds not far distant; then follow others from the Arctic tundras, the "Stints" (Least and Semipalmated Sandpipers), Baird's Sandpiper, Northern Phalarope, and many others. In August vagrant gulls, Short-bills and Ring-bills, Herring Gulls, and Bonaparte's Gulls, linger on such waters and early migrating ducks remain to feed and rest.

A marsh-fringed lake is irresistible. Slip quietly along its edge in a canoe, taking care to use for concealment each projecting finger of rushes. Here will be duck broods of many kinds and the maternal reactions to danger exhibited by the different species is a study in itself. There is much variation in the behaviour of individual ducks of the same species but the following activities are commonly observed.

A Baldpate usually leaves her brood and drops to the water a short distance to one side or in front of the moving canoe; then swims forward as if actually trying to lead the observers away from the young which meanwhile are scurrying over the water to safety in the rushes. Very often a Baldpate reacts in this way even when her brood is hidden in the marsh.

Blue-winged Teal act in a similar manner except that they usually lay the head flat and trail their wings on the water as if mortally wounded. Green-winged Teal may sometimes join forces and rush towards the canoe in a turmoil of spray.

Redhead and Canvas-back show less concern but a Lesser Scaup will leave her brood and swim about the canoe sometimes surging over the surface with neck outstretched and the body turned partly on one side so that the white underparts show. A loud purring note usually accompanies this performance.

Barrow's Golden-eye may exhibit no alarm even when the observer is only a few yards away from her brood. The young if diving for food will continue to do so while the female swims about on guard. If approached too closely, the mother may leave the brood as the young birds scamper across the water to safety.

Perhaps a true marsh affords more opportunities for close observation of nesting birds than does any other type of terrain. Tall cat-tails and bulrushes beckon an invitation and a lowlier vegetation on the oozy bottom gurgles a challenge. Invitation and challenge accepted, one proceeds, shoulders brushed by a waving, scented greenness and feet earth-bound by clinging bladder-wort and pond-weeds.

"An epitome of human life" quoth the philosopher; "Sanctuary and food for birds" countered the ornithologist!

One proceeds past a Loon's nest (a mound of broken-down bulrush strategically placed beside a channel which leads to open water). The nest containing one greenish-olive egg, and one downy young—a ball of black and white down, vitalized by a beady eye, which a few hours since had broken through the shell of the second egg.

Not far off is the floating home of a Holboell's Grebe with five light-coloured eggs conspicuous on the dark mass of the nest. The eggs of this bird when first laid are pale greenish white but soon become discoloured from contact with the rotted marsh vegetation of which the nests are made. Five species of Grebe nest in the Cariboo and this is one of the two larger species. It is a solitary nester, so also are the small Horned Grebe and Pied-billed Grebe. The smallest member of the family, the Eared Grebe, nests in marsh colonies, so also does the large, black and white Western Grebe.

Overhead, Black Terns are swooping, circling, on pointed gray wings that all but brush the cheek as the birds plane down, then mount skyward at an oblique angle. Yonder one hovers over a handful of marsh debris that proves to be its nest holding three olive, black-marked eggs. Dozens of the tiny young in fawn-coloured down scamper like mice over floating vegetation or swim across the marsh channels from one sedge clump to another.

A male Yellow-headed Blackbird, resplendent in orange and black, clings to a dead cat-tail and close by a fledgling Red-wing sways back and forth on a rush stem.

All these near the marsh edge; from farther off comes the sound of sudden splashes and the rustle of beating wings as low-flying ducks pass overhead. Excited calls from coot and rail and a momentary accelerated tempo in the medley of marsh sounds follow human intrusion into thicker cover.

Here we come on the dry tule nest of a Canvas-back with seven green eggs buried in a smother of light gray down and a dozen large white eggs in a less durable nest which is identified as that of a Ruddy Duck.

The Ruddy Duck is somewhat of an anomaly. Unlike other duck species the paired birds usually maintain a close companionship during and sometimes after the incubation period, a habit that may have some survival value. But on the other hand the female is less careful than other species of her eggs; they frequently are dropped in the marsh or on the shore

and it is common to find deserted nests. Furthermore the young are left to care for themselves at an early age and it is more usual to find quite young birds unattended than otherwise.

The student of waterfowl in the Dry Belt of British Columbia has learned that water, the great life-giver, is the chief factor controlling their numbers. Local populations rise and fall with the water supply. Water assures ample food and cover to conceal their nests and young. Loss of the young through predation is greatly lessened in years when an abundance of cover is available.

Beaver are a potent force in waterfowl conservation and the valuable work these engineers perform is particularly noticeable during years of drought. At such times the small lakes, whose outlets have been dammed by beaver, maintain the high spring water level, and the water thus stored ensures cover and food for nesting waterfowl. Similar lakes not occupied by beaver evaporate to such an extent that cover vegetation dries out and the amount of duck food rapidly diminishes.



A young Loon.



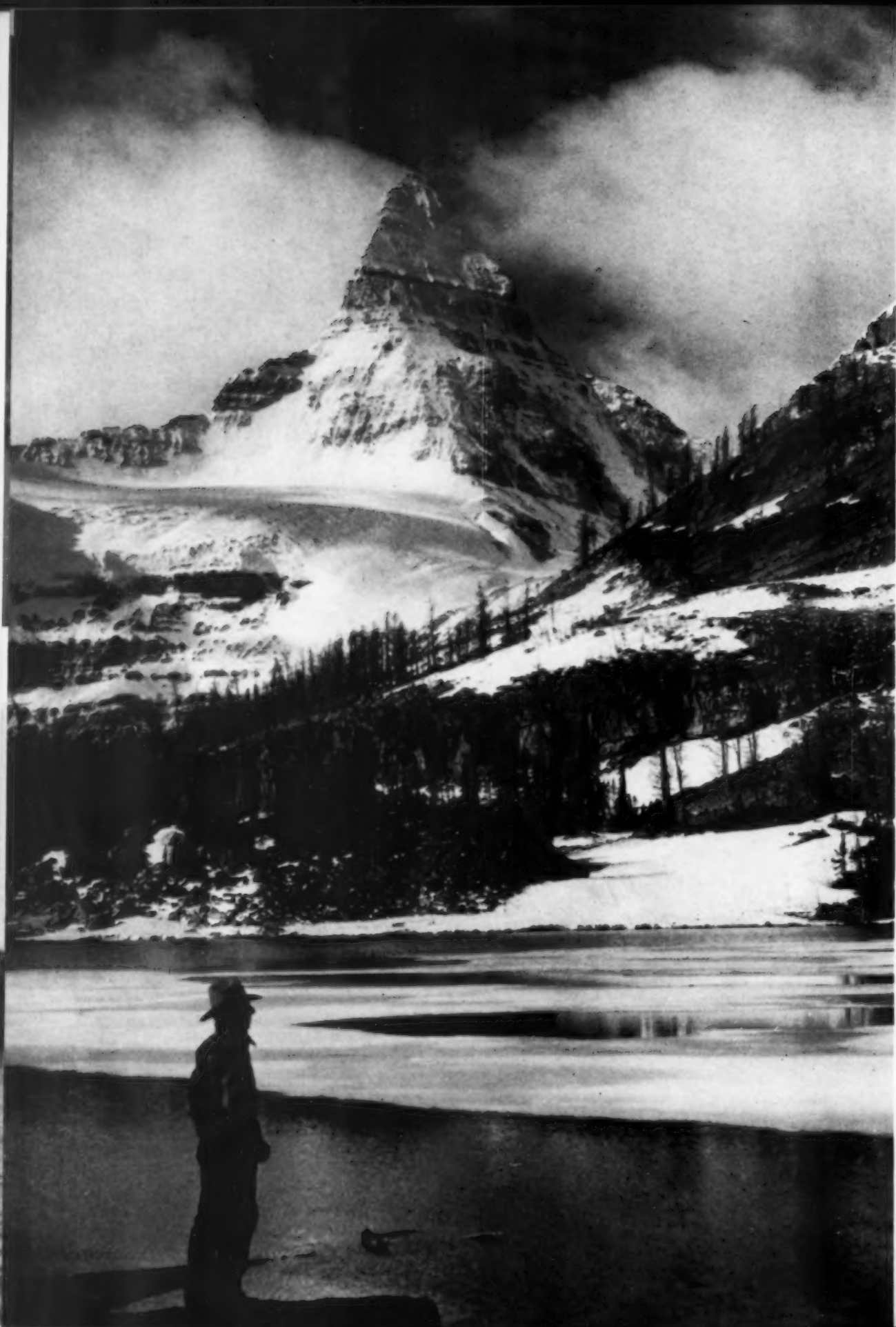
Napier Lake in the Nicola.
Female Barrow's Golden-eye and brood.





A poplar bluff in the Cariboo.
Young Canvas-backs on the San Jose River, Cariboo.





CANADA'S HOLY ALTARS

by CHARLES CLAY

*"... Each cloud-capt mountain is a holy altar
An organ breathes in every grove; ..."*

—THOMAS HOOD

BY the end of 1939, for the first time in history, the best of Canada's scenic Rocky Mountains will be completely and readily available to the traveller. The two trans-continental railroads have, of course, made certain areas more or less accessible for some 50 years; but by the end of 1939 the stretch of the trans-Canada motor highway through the mountains is to be completed, and the scenic motor route between Jasper and Banff will be a thing of smooth-surfaced efficiency. These two facts, added to the facilities of the many pack trails, will increase materially the joys of those who worship at Nature's holiest of altars.

For to the initiate the Rockies are more than mere inert mountains: they are mighty minsters with a magic all their own. Their immense awe-inspiring bulk, their magnetic colours, their withdrawn triumphant silence, cast a spell whose power is vitally positive and disturbing in its early influence; and yet it is a spell whose later power is an enfolding calm imperturbability, the inspiration that comes from high places.

It is, of course, the eye that is first impressed by the Rockies. Their very size is a wonder in itself. The fevered ingenuity of Man has never conceived or wrought anything whose monstrous bulk is equal to the vast towering grandeur of even a single mountain peak; and the sight of a mass of lofty god-like monuments in stone, soaring until their heavenward shoulders thrust aside the woolly clouds themselves, is enough to provoke staring wonder.

They are Creation's masterpiece in colour as well. Let the sun slant down long golden western rays, toss them through a cleft between two peaks and upon the bold face of still a third peak, and that mountain becomes magic, a magic that catches hold of the spectator and shakes the littleness, the miserliness, the intolerance clean out of him. There is no room for such and for the vision of the mountain's beauty as well.

That is the power of the mountains, the purging exorcism of those holy altars. The spell is undeniable.

And perhaps that spell is at its strongest in the ethereally beautiful Banff area, where Lake Louise sleeps in an eternal brooding peace unbroken by the alarms of Man's own show, Civilization. It was discovered more than fifty years ago by a young trapper and trader among the Stony Indians, Tom Wilson. He was led along a rich-scented forest trail by his guides until, suddenly, between the trees, he saw a sheet of water between steep slopes, and at the lake's edge the foam of a river that came from a high glacier beyond. Green, amethyst, violet, pigeon's egg blue, green shot with gold—all these colours people have seen in it; but Emerald Lake, the young trapper named it.

That name has since been changed, and much else. Where Tom Wilson came out of the woods and stood silent in surprise, a cement pavement rims the marge; and imported rich-hued Icelandic poppies dance in the sun where once only tufted willow-herb nodded dreamily.

Around Lake Louise stand heroic mountains brooding in silent majesty. Their reflections, repeated in the glimmering lake, disappear only when little winds, like unseen ghostly hands, brush across its velvet surface. The famous Ten Peaks, they stand serenely around the valley, grand sentinels of timelessness; and in several places down their broad slopes creep vast blind relentless glaciers, with wild crashing ice-falls and chill foaming rivulets that dip to the placid lake itself.

It is a scene of tremendous enfolding loneliness, and of eternal pillared peace. The air is scented with balsam fragrance; it throbs with a steadiness that is indifferent to man's puniness; it stirs but infrequently as a breeze sighs.

But the dawn is best, and especially the dawn on Lake Louise, which inverts the morning on its water-mirror, while night is still drowsy in the shore-side forests. The top of the Victoria glacier takes the sun; the dawn comes there, and

Left:—Mount Assiniboine, Sunburst Lake — a monarch in a robe of clouds, seated on a throne of rocks, and crowned with a diadem of snow.



Mount Lougheed, near Banff—flinging beauty generously, recklessly, at the stunned beholder.

simultaneously, to the smooth emerald surface of the lake itself.

Victoria is lit. Mount Whyte is lit. And in a flash their reflections are bright in Lake Louise, though the night is still heavy on either side of it. Even at the foot of the forested slopes to the west that face the slowly rising sun, night deeply lingers. The trees will not let it go. But when the lake holds, mirrored, the full bright morning of the summits, night reluctantly steals away.

It is all mountain magic where the ageless dead rocks become equally ageless living ambassadors of Time who make their presence felt by their peculiar emanating power. They reach out mysterious, healing, invigorating hands, and lay them in blessing upon the awed head of the observer.

The struggles of man against himself, of man against man, of nation against nation, dwarf into trifling insignificance when seen against the mighty back-drop of the mountains, when assuaged by the wordless benediction of those holy altars.

Generations have come and generations have gone, but the mountains remain—immutable, undismayed, serene: the heat and smoke and fire of conflict have played over the human tribes and over their little possessions, and those things that seemed important yesterday vanish to-day and those that seem important to-day will vanish to-morrow—yet mountains stood, and will stand, steadfast and calm; vain man struggles in the mud—and the mountains hold their silent peaks up to the blue vault of day and the spangled dome of night.

Top right:—Mount Rundle from Stoney Squaw mountain road, Banff—

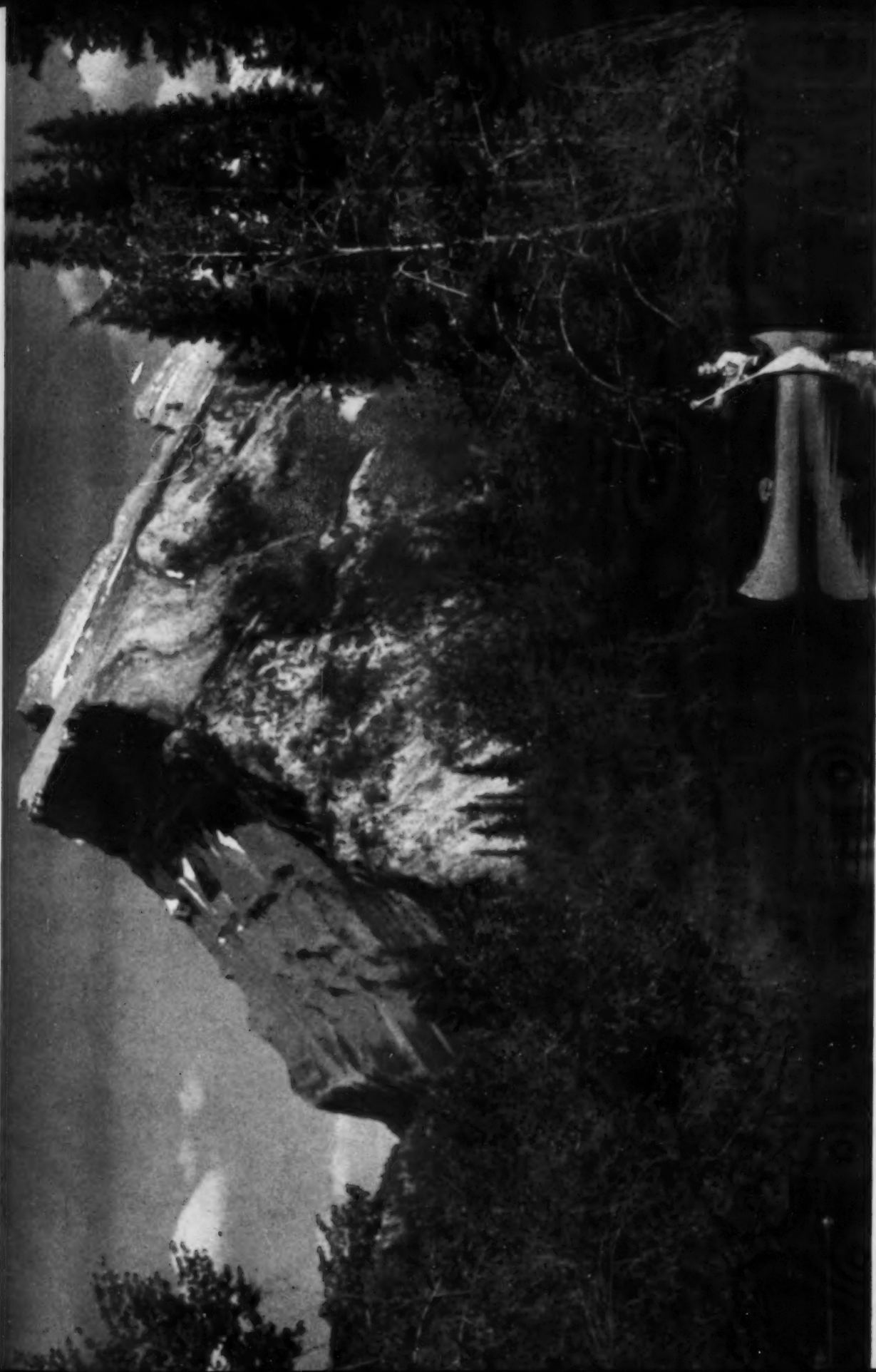
"... and jocund day
Stands tiptoe on the misty mountains' top". —Shakespeare

Bottom right:—Mount Lefroy at Lake Louise—their very size is a wonder in itself.





Moraine Lake in the Valley of the Ten Peaks — the electric zestfulness of water sheen and snow brightness.



Another view of Mount Rundle—wrought by gargantuan upheaval, fashioned and polished by suns and winds and waters.





The Mail Steamer.

A TRAVELLING MARKET ON THE IRRAWADDY

by ARTHUR SLATER

IT would be difficult to imagine a journey more full of variety, interest, and pleasure than a trip up the Irrawaddy River in Burma on board one of the weekly steamers that provide the chief market supply for the people that live in the districts through which the river flows. To have your weekly provisions brought practically to your doors by a finely equipped steamer is a decided privilege, and people, cut off from the main sources of supply by dense forests through which there is nothing better than a footpath, realize the debt they owe to the pioneers of river navigation in Burma, the Irrawaddy Flotilla Co., which for many years has been one of the most effective civilizing factors in Burmese life, linking the wild parts of the country to the main cities.

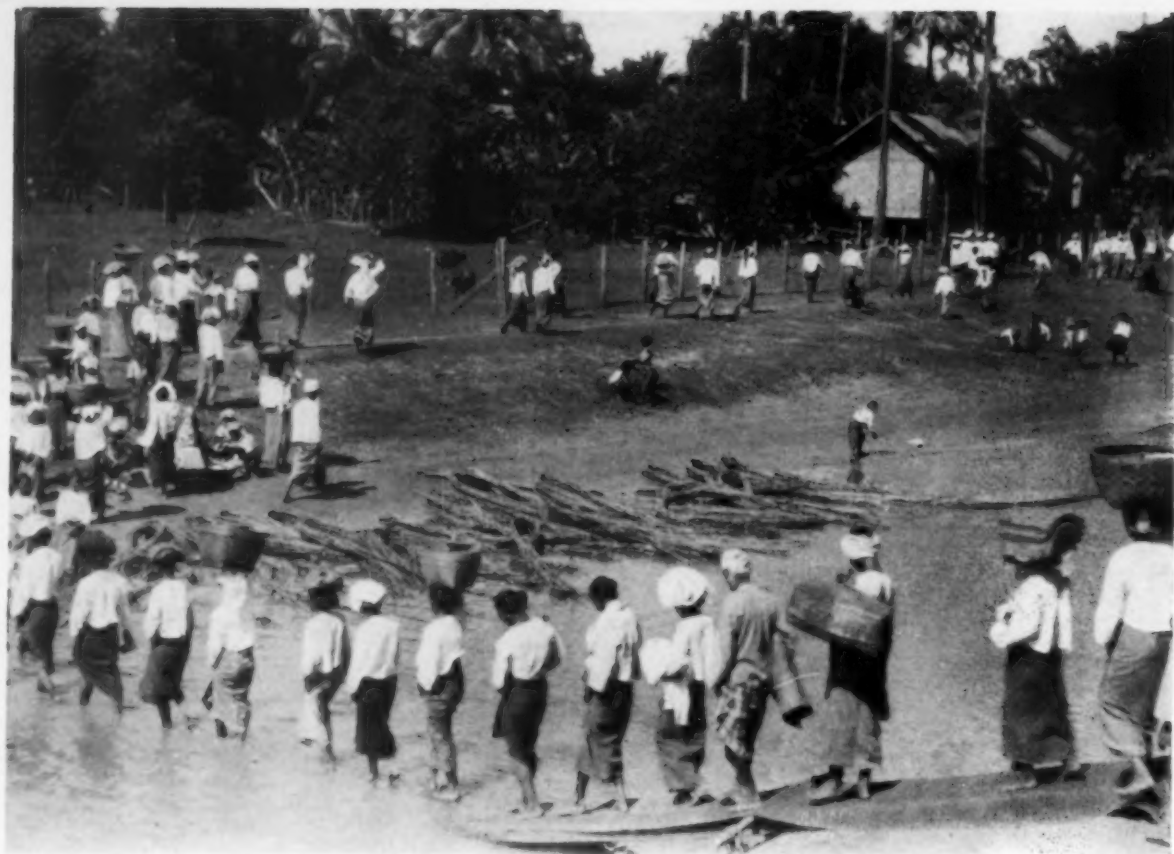
The long journey from Rangoon to the upper reaches of the Irrawaddy at Bhamo can be made on the fast mail steamers which complete the journey in less than a week; but if time is available, the traveller will derive infinitely more pleasure from a trip made in one of the Bazaar Boats which make the journey in a more leisurely way but none the less comfortable. The great advantage of choosing this type of vessel is that it provides a unique opportunity of coming into contact with a varied and

interesting lot of people, from gay Burmese to the inhabitants of some of the wildest districts of Burma, for members of all these races are to be seen awaiting the arrival of the travelling market with its consignments of goods of every class. Most of these people have never left the vicinity of the river, railways are unknown to them. Their only link with civilization is this floating bazaar boat that calls with supplies, much as a tradesman calls with his van in western towns.

The name "Bazaar Steamer" may create a prejudice in the mind of the traveller whose main thought is that of making the journey in comfort, for he may be under the impression that he may have to put up with a good deal of inconvenience and perhaps not a little of the objectionable smells associated with eastern bazaars. But he can be assured that a journey made in one of these steamers is just as comfortable as one made in the mail steamers, for they are splendidly fitted up with cabins and afford ample deck space for the first class travellers. The arrangement for meals is excellent, and the officers make it a point to make the journey interesting. As a rule the number of passengers is small so that they are free to take advantage of

Top left:—Burmese priests who are often among the passengers.

Bottom left:—A small shop to supply food to travellers on the steamer.



Villagers leaving the steamer after making purchases.

One of the creeks of the river.



the long peaceful hours as the boat makes its way steadily up the river.

Rangoon merchants, many of whom spend all their lives in making these trips, bring a large and varied supply of articles which are arranged in neat stalls along the promenade of the middle part of the vessel. One is amazed to see the type of articles offered for sale, ranging from fine silks, fountain pens, sock suspenders, chocolate, biscuits of every kind, to all the needs of domestic life. Before the vessel leaves Mandalay for the second part of the journey, a barge is attached to the side of the steamer. This boat is filled, from end to end, with shops dealing mainly in vegetables which are in great demand by the people in the upper reaches where such luxuries are not available. The speed of the boat is naturally affected by the addition of this large barge and renders navigation much more difficult. Before entering the narrow reaches of the river near the defiles, this barge is detached to be picked up again on the return journey.

Two or three times a day the bazaar boat stops to make calls at the larger villages. When approaching such a place of call a whistle is blown and large numbers of people are seen hurrying to the landing place to be in time to make their weekly purchases. Carefully, for the navigation is often very intricate, the vessel is brought near to the shore and two men jump into the water with a rope which they attach to a strong post. Planks are quickly put into position to allow the customers to come on board. Then follows a scene of great activity for the stay is limited and the captain will not permit extra time to those who are slow in making their purchases. Quickly the men and women pass from shop to shop, gather up their goods in their baskets, rush along the plank and regain the shore. Some, who are too slow in making their purchases, perhaps because they are trying to make a bargain, find themselves too late and have to jump, sometimes, to the great amusement of the crowd, falling into the shallow water. But the whole scene is one of great interest and all parties, those on board as well as the visiting men and women, enter into the event in high good humour.



Sampans on the river



Rice boat on the Irrawaddy

Every day brings a changing scene. There is great variety in the country along the river, sometimes long flat stretches followed by extensive jungles. But the greatest changes are to be seen in the types of people who await the boat. As the vessel proceeds the company on the shore includes considerable numbers of men and women belonging to what are practically uncivilized tribes. They live in distant jungles where there is little form of government, and their lives are conducted on a simple scale. Yet their baskets often contain supplies of biscuits, soap etc. The weekly steamer is their only contact with civilization.

Above Katha the scenery becomes wilder and there is little suggestion among the villagers of the bright cheerful colours of the Burmese people of the south. They are jungle people and one would like to know what they think of this strange vessel that comes so regularly, bringing its supplies from distant lands. But it has become so a part of their lives that they have perhaps ceased to wonder. But to the traveller along this unusual route every day is full of fresh surprises. There seems to be no end to the types of people he meets, and he watches the keenness with which all classes carry on their business. Having made their contact with the outer world they return to their dwellings in the forests, living the way in which their fathers for untold ages have lived.

As the river becomes narrower, navigation increases in difficulty and the greatest care has to be exercised in passing through the defiles where the rocks rise 800 feet sheer from the river, and between which the water runs at a great pace. In the

rainy season only the most skilful piloting will ensure a safe journey. No longer is the vegetable barge attached to the steamer for the strong current makes it difficult to make headway. The villages are now few and far between and the stops less frequent but every time there is the waiting crowd many of whom have made long weary journeys over the mountains to get their supplies. Soon Bhamo is reached and there the journey ends. For one or two days the steamer will lie here and then make its journey back again, travelling down-stream much quicker than on the upward journey.

Every day has brought something new. For hours the vessel steadily makes its way and the traveller is able to lie in comfort and quiet on the foredeck catching the changing scenery and the passing boats of all shapes and sizes that convey rice and other things down to the towns in the south. Now and again he will see the great timber rafts moving steadily southward, each raft having its little hut which accommodates those in charge on their long journey. Not infrequently, until more rigid supervision was exercised, these rafts were broken up by the steamers and many weeks would be spent in gathering together the scattered logs. It is well to leave the steamer at some of the places en route to see something of the village life. As the boat does not travel at night it is possible to get some hours ashore in the evening, and those experiences will be among the happiest of the journey. Such a journey by these floating markets will require a longer time than by the mail steamer but the traveller will be more than repaid for the extra time taken by his insight into life along the river.



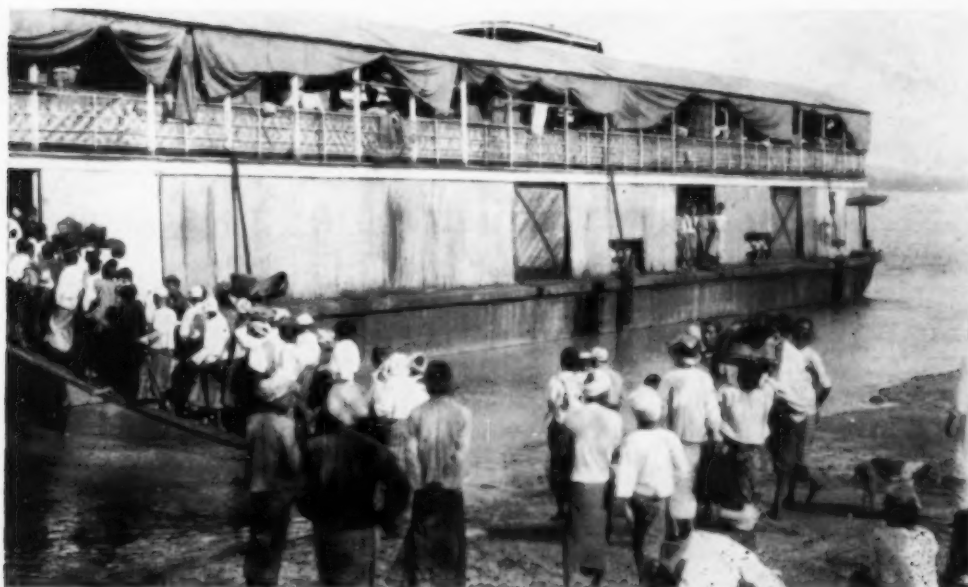
A group on the river side.



Coolies loading the
steamer with fire-
wood.



Villagers waiting
for the steamer to
tie up.



The vegetable
barges.


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EDITOR'S NOTE-BOOK

Dr. Lawrence J. Burpee, author of "The Great Lakes", has been the Secretary for Canada of the International Joint Commission for the past twenty-six years and is therefore qualified to present an authoritative article on this subject. He has also been president of the Royal Society of Canada, the Canadian Historical Association, and is a gold medallist of the French Academy and the Royal Society of Canada. Dr. Burpee has written many books on Canadian history, geography and biography and has contributed to encyclopaedias, transactions and magazines.

D. C. Harvey, M.A., F.R.S.C., was born in Prince Edward Island, educated at Prince of Wales College, Dalhousie and Oxford Universities and followed an academic career from 1913 to 1931 at McGill University, Wesley College and the Universities of Manitoba and British Columbia. In 1931 he returned to the Maritime Provinces as Archivist for Nova Scotia, special lecturer in History at Dalhousie University and Member of the Historic Sites and Monuments Board of Canada. The author of several books, he is a frequent contributor to the Dalhousie Review, Canadian Historical Review and other journals.

James Alexander Munro, born at Winnipeg, Manitoba, has been a District Migratory Bird Officer in Western Canada since the inauguration of the district service in 1920. Of late years he has specialized on bird life of British Columbia, its economic status and its protection. Mr. Munro has carried on extensive scientific investigations on the food habits of fish-eating birds and altogether is one of the most eminent Canadian ornithologists.

AMONGST THE NEW BOOKS

South American Excursion, by ERNEST YOUNG, (London: Edward Arnold, 1939, 18s. net). South America bids fair to supplant Europe as a traveller's paradise, at least for those who welcome novelty and do not expect all difficulties to be smoothed out. Mr. Young is a famous figure in the geographical world with many good travel books to his credit. We are told that on his retirement from active work he took this unusual journey in which he visited eight of the ten republics of South America.

Arriving from England by cargo boat, he proceeded to wander at his leisure roughly down

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the east coast and up the west, by road, railway and sea. From Rio and Sao Paulo he struck inland to the headwaters of the Parana River, which he descended (with an excursion into Paraguay) to Buenos Aires, saw Argentina in zig-zags, and crossed Patagonia to the Andes and Chile. Farther north he travelled overland from Quito through Columbia, and ended by voyaging along the coast from Baranquilla to Trinidad.

If the author had no sensational adventures his travels took him to many fascinating out of the way places, such as the beautiful Lake District in the Andes of Southern Chile, and the nitrate desert in the north of Chile, one of the most terrifying regions in the world. His descriptions of the more

obvious places are vivid and charming and his encounters with the people are related with the humour and sympathy one has learned to expect in this cultivated observer of human nature. In glancing over the chapter headings one is grateful for the musical Spanish and Portuguese names: from Santos to Alto Parana, Posadas to Buenos Aires, down the Magdalena, Popayan to Bogota, to mention but a few of the twenty-seven. The illustrations, most of them reproductions of Mr. Young's own photographs are very beautiful and the twenty specially-drawn maps are an invaluable addition to this delightful book about a continent, which has been a *terra incognita* to many of us.

FLORENCE F. FORSEY.

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Regional Geography in the United States since the War by GOTTFREID PFEIFER (American Geographical Society, New York, N.Y.)

The author does not attempt to exhaustively summarize the achievements of American geographers, but attempts to contribute towards an understanding of its purposes. The main discussion is concerned with regional geography, primarily in its relations to human geography. It is pointed out that American authors had a tendency in pre-war times to deal mostly with Physiography, Anthropogeography and Environmentalism, and the works of Davis are cited as those which first focused the attention of American writers on Physiography, while Semple, Brigham, Smith and Huntingdon were the pioneers in anthropogeomorphologic geography, and Davis, Powell, Bowman and Fenneman in Physiography.

In Part II, the works of Barrow and Sauer on human ecology are cited as being particularly instructive in that method of geographic treatment, in which the study of "the surface manifestation of man's present occupation of the earth, which makes up cultural landscape" is preached, and by which geographers were enjoined to go out into the field for their researches. Sauer insisted on this, and maintained that geography that could withstand criticism was one that made a study of a region and "landscape", defining "landscape" as an area made up of distinct association of forms, both physical and cultural, hence every landscape would be ever changing, being in a state of development, degradation and transformation. To make a

thorough study of these phases, work must be done in the field.

In Section III, under Persistent Environment, Small Areal Studies, Occupance Types, Sequent Occupance, and Methods of Investigation, the author puts the question—Has American geography, in recent years, followed the paths pointed out by Barrow and Sauer? In many cases the answer is in the negative, for environmentalism is still the explanation for many geographic factors. The regional school of geographers, however, subscribe to Barrow's and Sauer's proposals, and many small regional studies have been made.

The methods of representing geographic features and land classification by means of perspective diagrams and pictorial symbols are discussed and compared with results obtained in Germany. The use of the fractional code method applied by Finch is suggested as being one which probably stimulates suggestion for preliminary work in regional planning of "colonial" areas.

Some criticism has been directed at regionalism by certain authors. Many ask, what has been the use of the collection of detailed facts. Has this minute methodology been of any use in giving a new general geographic concept of the earth. The detail is the obvious, so why waste time collecting it. Every type of study is possibly inadequate, since it does not contribute to the knowledge of the world as a whole. Bowman maintains that technique is only a scheme, not ideas, but the servant of ideas, and that if geography is ever to have any influence on political or social policies, it must deal with ideas that are of some critical importance to governments and society, and they must be conveyed in words that leaders can understand. To play with dots, charts and symbols is but a kindergarten game, useless, unless they be made tools for explaining things valuable for the destiny of mankind.

Since the depression, it is generally recognized that geographers have a decisive word to say in all regional planning. Many eminent geographers have been called upon during the present American administration to assist in repairing the damage done during boom times, by the much too rapid exploitation of natural resources. Reforestation, resettlement, or supplementary means of livelihood have been encouraged, not a continued attack on the remnants of the natural landscape, but a reduction of the cultivated areas. Marginal areas need assistance, and reckless or extensive agriculture and grazing is deplored. Thus the broader relations in the field of cultural geology are being emphasized, not the inductive method of microscopic geography.

The author, being an outsider who has spent several years in the United States, perhaps has a better perspective of the American geographical trend than those working on this continent. He deals sympathetically with the criticism of the various authors, and the main line of American development has been traced, as well as the intellectual influences that have affected it. For students, this review is especially useful, as it weeds out much material of lesser importance, and provides a list of the most essential works which show the geography on this continent.

D. A. NICHOLS.